

TECHNICAL GUIDE 50Hz



Heating and Air Conditioning

PREDATOR[®]

MagnaDRY[™]

SINGLE PACKAGE AIR CONDITIONERS AND SINGLE PACKAGE GAS/ELECTRIC UNITS

DR090
7-1/2 NOMINAL TONS



DESCRIPTION

YORK[®] Predator[®] MagnaDRY[™] units are convertible single packages with a common footprint cabinet and common roof curb for all 7-1/2 ton models. All units have two compressors with independent refrigeration circuits. The units were designed for light commercial applications and can be easily installed on a roof curb, slab, roof jack, or frame.

All Predator[®] MagnaDRY[™] units are self-contained and assembled on rigid full perimeter base rails allowing for 3-way forklift access and overhead rigging. Every unit is completely charged, wired, piped, and tested at the factory to provide a quick and easy field installation.

All units are convertible between side and down airflow. A single economizer design is used on side and down discharge applications, as well as all tonnage sizes.

The Predator[®] MagnaDRY[™] provides energy-savings, efficient removal of moisture through a balanced coil design. Because the unit doesn't increase sensible cooling, it allows temperatures to be maintained within the comfort zone. Unlike competitive systems, you're not subjected to over cooling. You save through more efficient matching of dehumidification and cooling needs. This makes the MagnaDRY[™] perfect for applications that need to remove large amounts of moisture or maintain low humidity levels.



ISO 9001
Certified Quality
Management System

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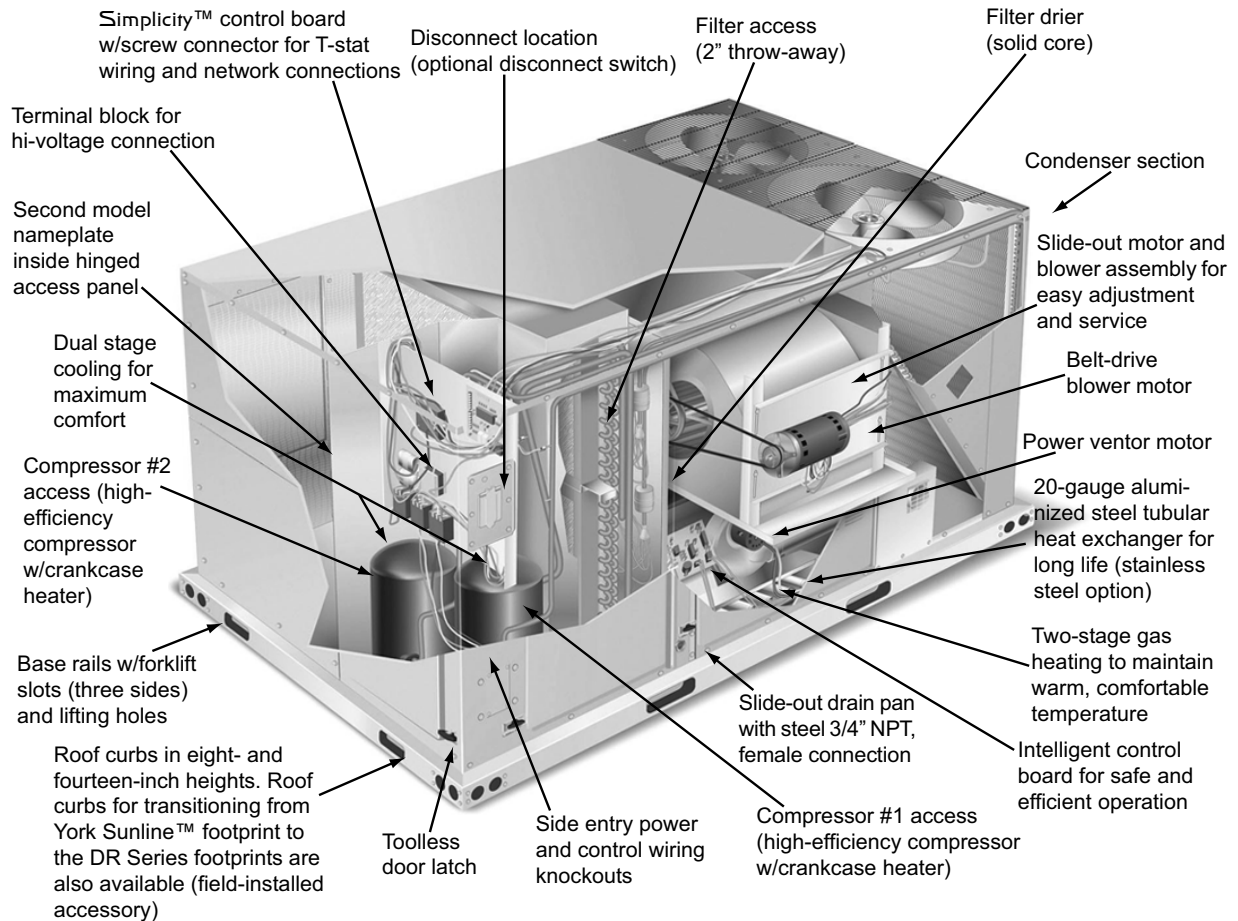


FIGURE 1 - PREDATOR® COMPONENT LOCATION

FEATURES

- **Standard Efficiency**— All standard efficiency units have a minimum EER of 10.5 (3.08 CoP). Gas/electric units have electronic spark ignition and power vented combustion with steady state efficiencies of 80%.
- **Service Friendly** – The Predator® incorporates a number of enhancements which improve serviceability.

The motor and blower slide out of the unit as a common assembly. This facilitates greater access to all the indoor airflow components, thus simplifying maintenance and adjustment.

Service time is reduced through the use of hinged, toolless panels. Such panels provide access to frequently inspected components and areas, including the control box, compressors, filters, indoor motor & blower, and the heating section. The panels are screwed in place at the factory to prevent access by children or other unauthorized persons. It is recommended that the panels be secured with screws once service is complete.

Service windows have been placed in both condenser section walls. Rotation of the cover allows easy access to the condenser coils for cleaning or inspection.

Both the unit control board and ignition control board utilize flash codes to aid in diagnosis of unit malfunctions. Unique alarm codes quickly identify the source of the unit alarm.

All units use the same standard filter size. This standardization removes any confusion on which filter sizes are needed for replacement.

The non-corrosive drain pan slides out of the unit to permit easy cleaning. The drain pan is accessed by removing the drain pan cover plate on the rear of the unit. Once the plate is removed, the drain pan slides out through the rear of the unit.

All Predator® units have a second model nameplate located inside the control access door. This is to prevent deterioration of the nameplate through weathering.

- **Environmentally Aware** – For improved Indoor Air Quality, foil faced insulation is used exclusively throughout the units.
- **Balanced Heating** – The Predator® offers “Ultimate Heating Comfort” with a balance between 1st and 2nd stage gas heating. The 1st stage of a gas heat Predator® unit provides 60% of the heating capacity. Balanced heating allows the unit to better maintain desired temperatures.

- **Convertible Airflow Design** – The side duct openings are covered when they leave the factory. If a side supply/return is desired, the installer simply removes the two side duct covers from the outside of the unit and installs them over the down shot openings. No panel cutting is required. Convertible airflow design allows maximum field flexibility and minimum inventory.
- **System Protection** - Suction line freezestats are supplied on all units to protect against loss of charge and coil frosting when the economizer operates at low outdoor air temperatures while the compressors are running. Every unit has solid-core liquid line filter-driers and high and low-pressure switches. Internal compressor protection is standard on all compressors. Crankcase heaters are standard on reciprocating compressors. Scroll compressors do not require crankcase heaters. Phase Monitors are standard on units with scroll compressors. This accessory monitors the incoming power to the unit and protects the unit from phase loss and reversed phase rotation.
- **Advanced Controls** - Simplicity™ control boards have standardized a number of features previously available only as options or by utilizing additional controls.
 - **Low Ambient** - An integrated low-ambient control allows all units to operate in the cooling mode down to 0°F (-17.8°C) outdoor ambient without additional assistance. Optionally, the control board can be programmed to lockout the compressors when the outdoor air temperature is low or when free cooling is available.

CAUTION

The Simplicity® control board used in this product will effectively operate the cooling system down to 0°F when this product is applied in a comfort cooling application for people. An economizer is typically included in this type of application. When applying this product for process cooling applications (computer rooms, switchgear, etc.), please reference applications bulletin AE-011-07 or call the applications department for Unitary Products @ 1-877-UPG-SERV for guidance. Additional accessories may be needed for stable operation at temperatures below 30° F.

- **Anti-Short Cycle Protection** - To aid compressor life, an anti-short cycle delay is incorporated into the standard controls. Compressor reliability is further ensured by programmable minimum run times. For testing, the anti-short cycle delay can be temporarily overridden with the push of a button.
- **Fan Delays** - Fan on and fan off delays are fully programmable. Furthermore, the heating and cooling fan delay times are independent of one another. All units are programmed with default values based upon their configuration of cooling and heat.

- **Safety Monitoring** - The control board monitors the high and low-pressure switches, the freezestats, the gas valve, if applicable, and the temperature limit switch on gas and electric heat units. The unit control board will alarm on ignition failures, compressor lockouts and repeated limit switch trips.
- **Nuisance Trip Protection and Strikes** - To prevent nuisance trouble calls, the control board uses a “three times, you’re out” philosophy. The high and low-pressure switches and the freezestats must trip three times within two hours before the unit control board will lock out the associated compressor.
- **On Board Diagnostics** - Each alarm will energize a trouble light on the thermostat, if so equipped, and flash an alarm code on the control board LED. Each high and low-pressure switch alarm as well as each freezestat alarm has its own flash code. The control board saves the five most recent alarms in memory, and these alarms can be reviewed at any time. Alarms and programmed values are retained through the loss of power.
- **Reliable** – From the beginning – All units undergo computer automated testing before they leave the factory. Units are tested for refrigerant charge and pressure, unit amperage, and 100% functionality. For the long term – All Predator® units are painted with a long lasting, powder paint that stands up over the life of the unit. The paint used has been proven by a 1000 hour salt spray test.
- **Flexible Placement** – All models and configurations share the same cabinet/footprint and thus the same roof curb. You have the flexibility to set one curb and choose the correct tonnage size and heating option after the internal loads have been determined.

To further simplify planning and installation, Predator® cabinets are designed to fit your roof. With the optional roof curb, the unit ductwork is designed to fit around 24” (610 mm) on-center joists or between 48” (1219 mm) on-center joists.

The drain pan can be rotated to drain to either the front or the rear of the unit. Additionally, the drain pan can be piped to drain through the roof curb. As it is sometimes difficult to have a level installation, the drain pan features a generous slope to ensure proper drainage.

- **Full Perimeter Base Rails** – The permanently attached base rails provide a solid foundation for the entire unit and protect the unit during shipment. The rails offer forklift access from 3 sides, and rigging holes are available so that an overhead crane can be used to place the units on a roof.
- **Easy Installation** – Gas and electric utility knockouts are supplied in the unit underside as well as the side of the unit. A clearly identified location is provided to mount a field supplied electrical disconnect switch. Utility connections can be made quickly and with a minimum amount of field labor.

All units are shipped with 2” (51 mm) filters installed.

- **Wide Range of Indoor Airflows** – All indoor fan motors are belt-drive type providing maximum flexibility to handle most airflow requirements. For high static applications, factory installed alternate indoor fan motors are available. With the optional indoor fan motor, all units can supply nominal airflow at a minimum of 1.5" (375 Pa) ESP.

FACTORY INSTALLED OPTIONS

YORK® offers several equipment options factory installed, for the Predator® line.

- **Optional Factory Installed Economizers** - Predator units offer a variety of optional factory installed economizers with low leak dampers. The outdoor air enthalpy sensor enables economizer operation if the outdoor enthalpy is less than the setpoint of the economizer logic module. See Table 27 to determine the correct economizer for your application.
 - **Downflow Economizer - (With barometric relief)** - The economizer is provided with a single enthalpy input. The economizer is 2% low leakage type, and is shipped installed and wired. The installer needs only to assemble and mount the outdoor air hood (Provided). The economizer has spring return, fully modulating damper actuators and is capable of introducing up to 100% outdoor air. As the outdoor air intake dampers open, the return air dampers close. The changeover from mechanical refrigeration to economizer operation is regulated by the standard single enthalpy input. There is an optional input dual dry bulb available. To meet regulated air standards, the economizer control accepts an optional CO₂ input for demand ventilation. With single enthalpy input, the economizer control monitors outdoor air. The dual enthalpy kit provides a second input used to monitor the return air. With a dual input kit installed, the economizer control compares the values of the two enthalpy or temperature inputs and positions the dampers to provide the maximum efficiency possible.
 - **Horizontal Economizer - (Without barometric relief)** - All features as the downflow economizer exist except you must order the barometric relief separately. **You must order a 1EH0408 if you are installing a power exhaust. You can order a 1RD0411 Barometric Relief for horizontal flow economizers only.**
 - **BAS Ready Economizer - (With barometric relief)** - The economizer is provided with an actuator that requires a 0-10V DC input from an external source (i.e., field installed building automation system controller). Power exhaust options are available. The economizer is 2% low leakage type with spring return and fully modulating dampers capable of introducing up to 100% outside air. Also include 2" (51 mm) pleated filters.
- **Power Exhaust (Downflow only)** - This accessory installs in the unit with a down flow economizer.
- **Motorized Outdoor Air Damper** - The motorized outdoor air damper includes a slide-in/plug-in damper assembly with an outdoor air hood and filters. The outdoor air dampers open to the preset position when the indoor fan motor is energized. The damper has a range of 0% to 100% outdoor air entry. Factory installed option or field installed accessory.
- **Alternate Indoor Blower Motor** - For applications with high static restrictions, units are offered with optional indoor motors that provide higher static output and/or higher airflow, depending upon the installer's needs.
- **Aluminized Steel Gas Heat Exchanger** - For applications in non-corrosive environments.
- **Stainless Steel Gas Heat Exchanger** - For applications in corrosive environments, this option provides a full stainless steel heat exchanger assembly.
- **Electric Heaters** - The electric heaters range from 9kW to 54kW and are available in all the voltage options of the base units. All heaters are dual staged. All heaters are intended for single point power supply.
- **Disconnect Switch** - For gas heat units and cooling units with electric heat, a HACR breaker sized to the unit is provided. For cooling only units, a switch sized to the largest electric heat available for the particular unit is provided. Factory installed option only.
- **Smoke Detectors** - The smoke detectors stop operation of the unit by interrupting power to the control board if smoke is detected within the air compartment. Available for both the supply and/or return air.

WARNING

Factory installed smoke detectors in the return air, may be subjected to freezing temperatures during "off" times due to outside air infiltration. These smoke detectors have an operational limit of 32 °F to 131°F. Smoke detectors installed in areas that could be outside those limitations will have to be moved to prevent having false alarms.

- **Phase Monitors** - Designed to prevent unit damage. The phase monitor will shut the unit down in an out-of phase condition. **(Standard on units with Scroll Compressors.)**
- **Coil Guard** - Customers can purchase a coil guard kit to protect the condenser coil from damage. Additionally, this kit stops animals and foreign objects from entering the space between the inner condenser coil and the main cabinet. This is not a hail guard kit.
- **Dirty Filter Switch** - This kit includes a differential pressure switch that energizes the fault light on the unit thermostat, indicating that there is an abnormally high pressure drop across the filters. Factory installed option or field installed accessory.

- **Technicoat Condenser Coils** - The condenser coils are coated with a phenolic coating for protection against corrosion due to harsh environments.
- **Technicoat Evaporator Coil** - The evaporator coils are coated with a phenolic coating for protection against corrosion due to harsh environments.
- **Novar® BAS Control** - The Novar® building automation system controller is factory installed. Includes supply air sensor, return air sensor, dirty filter indicator switch, and air proving switch.
- **Johnson Controls BAS Control** - The Johnson Control YK-UNT-1126 building automation system controller is factory installed. Includes supply air sensor, return air sensor, dirty filter indicator switch, and air proving switch.
- **CPC BAS Control** - The Computer Process Controls Model 810-3060 ARTC Advanced Rooftop building automation system controller is factory installed. Includes supply air sensor, return air sensor, dirty filter indicator switch, and air proving switch.
- **Honeywell BAS Control** - The Honeywell W7750C building automation system controller is factory installed. Includes air supply sensor, return air sensor, dirty filter indicator switch, and air proving switch.
- **Barometric Relief Damper** - Zero to 100% capacity barometric relief dampers for use with horizontal flow, or field installed slab economizers.
- **Power Exhaust** - This accessory installs in the unit with a down flow economizer. Power exhaust plugs into the connector in the unit bulkhead. **You must purchase 1EH0408 barometric relief/power exhaust hood when applying to a horizontal flow application.**
- **Manual Outdoor Air Damper** - Like the motorized outdoor air damper, each manual outdoor air damper includes a slide-in damper assembly with an outdoor air hood and filters. Customers have a choice of dampers with ranges of 0% to 100% or 0% to 35% outdoor air entry.
- **Motorized Outdoor Air Damper** - The motorized outdoor air damper includes a slide-in/plug-in damper assembly with an outdoor air hood and filters. The outdoor air dampers open to the preset position when the indoor fan motor is energized. The damper has a range of 0% to 100% outdoor air entry. Factory installed option or field installed accessory.
- **Smoke Detectors** - The smoke detectors stop operation of the unit by interrupting power to the control board if smoke is detected within the air compartment.
- **CO₂ Sensor** - Senses CO₂ levels and automatically overrides the economizer when levels rise above the preset limits.

FIELD INSTALLED ACCESSORIES

YORK® offers several equipment accessories for field installation, for the Predator® line.

- **Downflow Economizer - (With barometric relief)** - The economizer is provided with a single enthalpy input. The economizer is 2% low leakage type. The economizer has spring return, fully modulating damper actuators and is capable of introducing up to 100% outdoor air. As the outdoor air intake dampers open, the return air dampers close. The changeover from mechanical refrigeration to economizer operation is regulated by the standard single enthalpy input. There is an optional input dual dry bulb available. To meet regulated air standards, the economizer control accepts an optional CO₂ input for demand ventilation. With single enthalpy input, the economizer control monitors outdoor air. The dual enthalpy kit provides a second input used to monitor the return air. With a dual input kit installed, the economizer control compares the values of the two enthalpy or temperature inputs and positions the dampers to provide the maximum efficiency possible.
- **Horizontal Economizer - (Without barometric relief)** - All features as the downflow economizer exist except you must order the barometric relief separately. **You must order a 1EH0408 if you are installing a power exhaust. You can order a 1RD0411 Barometric Relief for horizontal flow economizer.**
- **Dual Enthalpy Control, Accessory** - This kit contains the required components to convert a single enthalpy economizer to dual enthalpy.
- **Dirty Filter Switch** - This kit includes a differential pressure switch that energizes the fault light on the unit thermostat, indicating that there is an abnormally high pressure drop across the filters.
- **Coil Guard** - Field installed decorative wire coil guard.
- **Hail Guard** - This kit includes a sloped hood which installs over the outside condenser coil and prevents damage to the coil fins from hail strikes. Field installed accessory only.
- **Flue Exhaust Extension Kit** - In locations with wind or weather conditions which may interfere with proper exhausting of furnace combustion products, this kit can be installed to prevent the flue exhaust from entering nearby fresh air intakes.
- **-60°F Gas Heat Kit** - For installations which require gas heat units to perform in low ambient temperatures, a gas section heating kit is available. This kit provides electric heat in the gas heat controls section to ensure the gas valve and controls will continue to function properly at extremely low temperatures.
- **Gas Heat High Altitude Kit** - This kit converts a gas heat unit to operate at high altitudes, 2,000 to 6,000 feet. Conversion kits are available for natural gas and propane.

- **Gas Heat Propane Conversion Kit** - This kit converts a gas-fired heater from natural gas to propane. It contains the main burner orifices and gas valve replacement springs.
- **Gas Piping Kit** - Contains pipe nipples, fittings and gas cock required for gas supply connection with external shut off.
- **Electric Heaters** - The electric heaters range from 9 kW to 54kW and are available in all the voltage options of the base units. All heaters are dual staged. Cooling units include an adapter panel for easy installation of the electric heaters. Necessary hardware and connectors are included with the heaters. All heaters are intended for single point power supply.
- **Low Limit / Compressor Lockout Kit**
 1. **Compressor Lockout (CLO):** To prevent mechanical (compressorized) operation of the unit during cold outdoor conditions where there is a risk of returning liquid refrigerant back to the compressors.
 2. **Low Limit Control (LLC):** To prevent the supply air from dropping below a specified setpoint by utilizing the units first stage heating means when there is a demand for cooling during cold outside conditions.
- **Metal Frame Filter Kit** - Metal frame with polyester filter medium.
- **Permanent Filters** - Permanent filters are available.
- **Roof Curbs** - The roof curbs have insulated decks and are shipped disassembled. The roof curbs are available in 8" (203 mm) and 14" (356 mm) heights. For applications with security concerns, burglar bars are available for the duct openings of the roof curbs.
- **Roof Curb Transition** - Single Piece Adapter (10" (254 mm) High) - Roof curbs for transitioning from Sunline™ units to Predator® Magnum. Fits 7.5 to 12.5 Sunline™ roof curbs only.
- **Burglar Bars** - Mount in the supply and return openings to prevent entry into the duct work.
- **Thermostat** - The units are designed to operate with 24-volt electronic and electro-mechanical thermostats. All units (with or without an economizer) operate with two-stage heat/two-stage cool or two-stage cooling only thermostats, depending upon unit configuration.

REHEAT MODE SEQUENCE OF OPERATION

The reheat control board allows the user to select two different modes of operation via a jumper connection on the board. (See Figure 2.) Each mode is described below. Refer to Figures 2 and 3 when reading this section.

"NORMAL" MODE

When the reheat control board (RCB) detects a need for dehumidification (24VAC) at "HUM" via the field supplied dehumidistat connected to RHTB-1 and RHTB-2 and there is not a call for cooling, it energizes the hot gas relay (HGR), which energizes the 3-way valve (SOL 3), the condenser coil valve (SOL 2), and de-energizes the reheat coil bleed valve (SOL 1). The Y1 signal is passed to the unit control board (UCB), which engages circuit # 1, resulting in circuit #1 reheat mode operation.

When the room thermostat calls for first stage cooling, with or without a call for dehumidification, the RCB senses a signal through "Y1", de-energizing the HGR, which de-energizes SOL 3 and SOL 2 and energizes SOL 1, engaging circuit #1, resulting in circuit #1 cooling mode operation.

When the room thermostat calls for second stage cooling, the RCB senses a signal through "Y1" & "Y2" and engages circuit #1 and circuit #2 in cooling mode.

Indoor blower operation is initiated upon a call for first stage cooling, second stage cooling or dehumidification.

Anytime there is a call for 2 stages of cooling, the unit will not operate in the reheat mode, even if there is a call for dehumidification at "HUM".

The unit will not operate in the reheat mode if there is any call for heating.

On units with economizers, the unit will not operate in the reheat mode if there is a call for cooling and the economizer is operating as first stage of cooling.

All safety devices function as previously described.

"ALTERNATE" MODE

When the RCB detects a need for dehumidification (24VAC) at "HUM" via the field supplied dehumidistat connected to RHTB-1 and RHTB-2, and there is not a call for cooling, it energizes the HGR, which energizes the SOL 3, SOL 2, and de-energizes SOL 1. The unit then operates with circuit #1 in reheat mode and circuit #2 in cooling mode.

When the room thermostat calls for first stage cooling while there is still a call for dehumidification, no operational change is made. The call for cooling is ignored and the unit continues to operate with circuit #1 in reheat mode and circuit #2 in cooling mode.

When the room thermostat calls for second stage cooling, the RCB senses a signal through "Y1" and "Y2" and de-energizes the HGR, which de-energizes SOL 3 and SOL 2, and energizes SOL 1. Both circuits operate in the cooling mode.

Indoor blower operation is initiated upon a call for first stage cooling, second stage cooling or dehumidification.

Anytime there is a call for 2 stages of cooling, the unit will not operate in the reheat mode, even if there is still a call for dehumidification at "HUM".

The unit will not operate in the reheat mode if there is any call for heating.

All safety devices function as previously described.

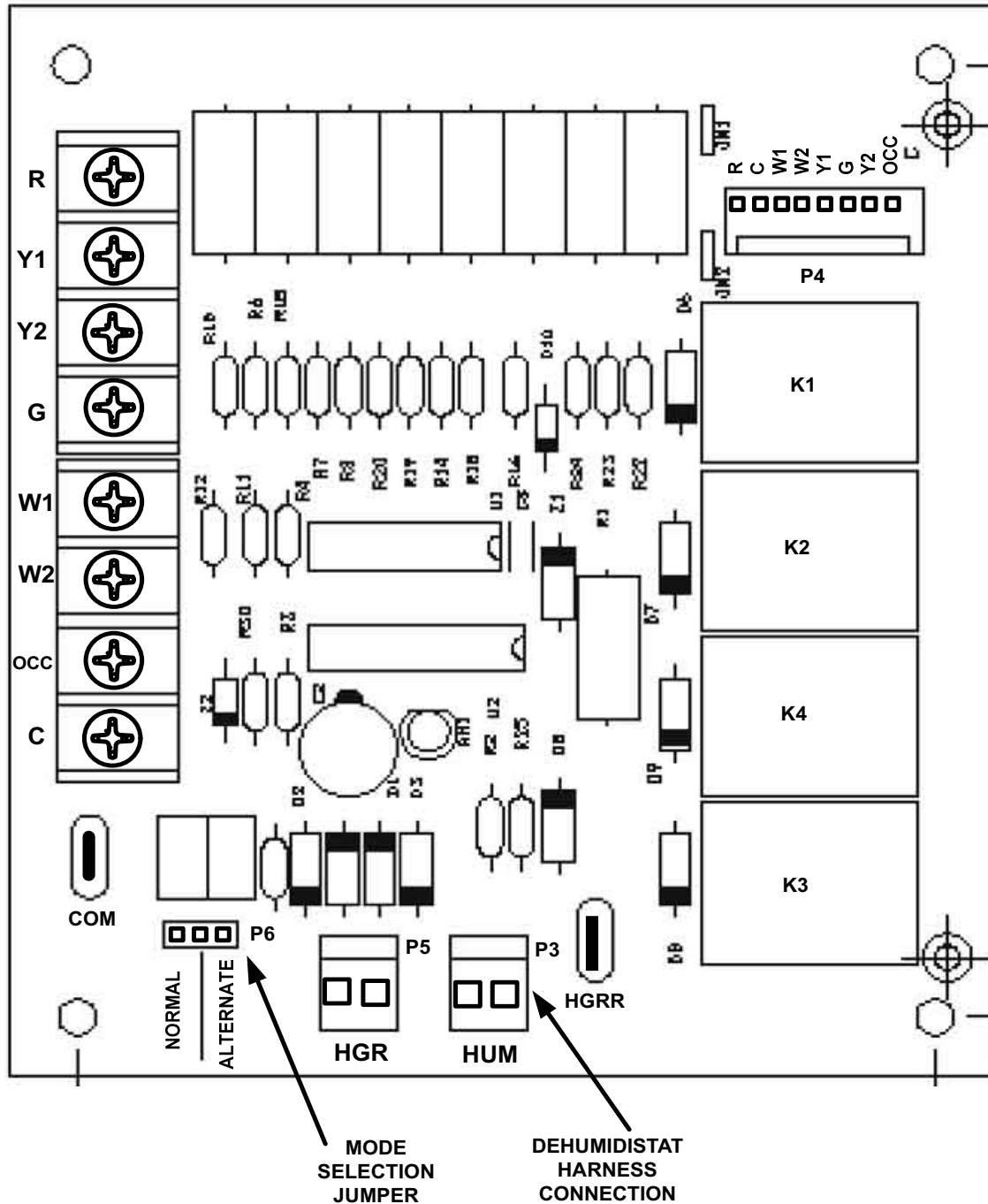
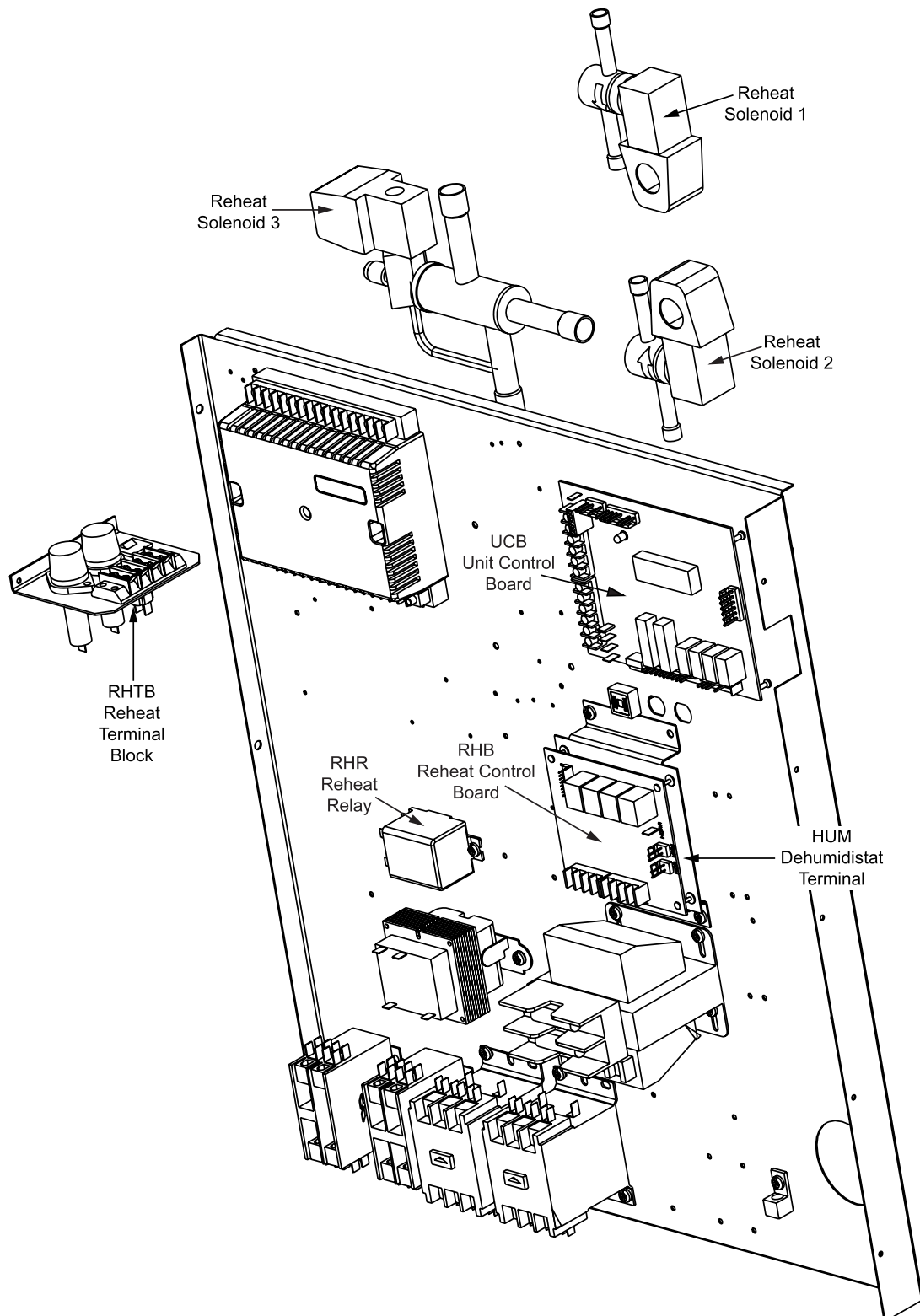


FIGURE 2 - REHEAT CONTROL BOARD

**FIGURE 3 - DR090 REHEAT CONTROLS**

NOMENCLATURE

7.5 Ton York® Model Number Nomenclature

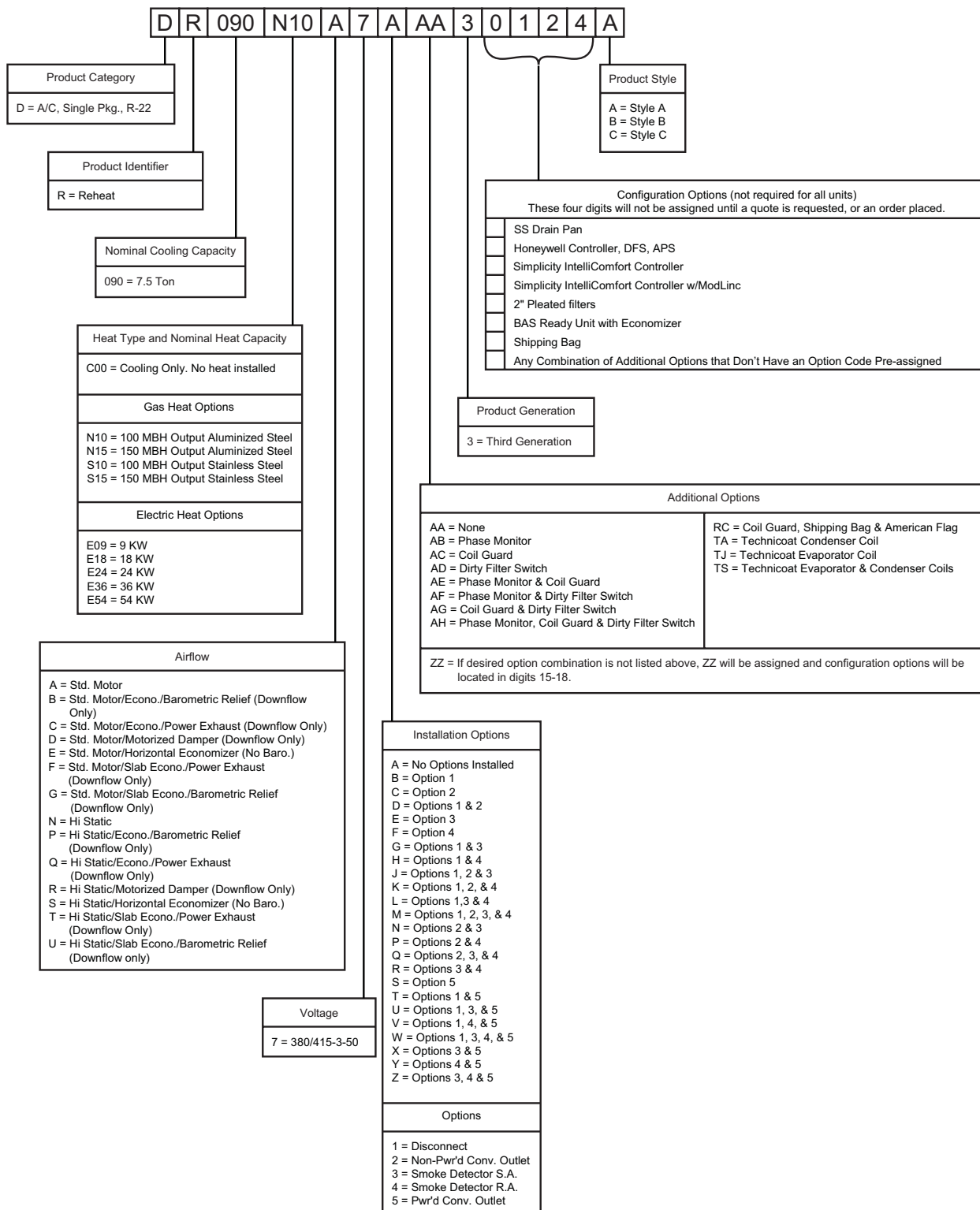


TABLE 1: PHYSICAL DATA

Component		Models
		090
Evaporator Blower	Blower, Centrifugal Dia. X Wd. in. (Dia. X Wd. mm.)	15 x 15 (381 x 381)
	Motor, Standard - HP (kW)	1-1/2 (1.1)
	Motor, Optional - HP (kW)	2 (1.5)
Evaporator Coil	Rows	3
	Fins per 2.54 cm (1 in.)	15
	Height - in. (mm.)	32 (810)
	Face Area - ft. ² (m ²)	10.6 (0.98)
Reheat Coil	Rows	2
	Fins per 2.54 cm (1 in.)	13
	Height - in. (mm.)	28 (710)
	Face Area - ft. ² (m ²)	7.8 (0.72)
Condenser Fan	Quantity	2
	Propeller Dia. - in. (mm.) ea.	24 (610)
	Motor - HP (kW) ea.	3/4 (0.56)
	Airflow - CFM (m ³ /s) ea.	3700 (1.75)
Condenser Coil	Coils	2
	Rows (each)	1
	Fins per inch 2.54 cm (1 in.)	20
	Height - in. (mm.)	44 (1120)
	Face Area - ft. ² (m ²)	14.5 (1.35)
Refrigerant Charge	System 1 - lb. (kg.)	8.0 (3.63)
	System 2 - lbs. (kg.)	6.375 (2.89)
Compressors	Quantity	2
	Type	Recip
Air Filters	Size Wd. x Ht. x Thickness in. (Wd. x Ht. x Thickness mm.)	25 x 20 x 2 (635 x 508 x 51)
	Quantity	4

TABLE 2: CAPACITY RATINGS IMPERIAL

Model		Cooling Capacity		Sound Rating (dB)	Nominal Electric Heat Capacity (kW) ¹	Gas Heat Capacity			
		(80 / 67-95°F)				Input (MBH)	Output (MBH)	Temp Rise (°F)	Gas Line Size (in. OD)
Cooling Cap. (MBH)	Options	MBH	EER						
090	DR	90	10.5	85	7, 14, 18, 27	-	-	-	-
	10	-	-	-	-	120	96	15-45	3/4
	15	-	-	-	-	180	144	30-60	3/4

1. Electric heaters rated at 415V. See table 8 for kW ratings at 380V.

TABLE 3: CAPACITY RATINGS METRIC

Model		Cooling Capacity		Sound Rating (dB)	Nominal Electric Heat Capacity (kW) ¹	Gas Heat Capacity			
		(27/19-35°C)				Input (kW)	Output (kW)	Temp Rise (°C)	Gas Line Size (mm. OD)
Cooling Cap. (kW)	Options	kW	CoP ²						
090 (26.4)	DR	26.4	3.08	85	7, 14, 18, 27	-	-	-	-
	10	-	-	-	-	35.1	28.1	8.3-25	19.05
	15	-	-	-	-	52.7	42.2	17-33	19.05

1. Electric heaters rated at 415V. See tables 8 for kW ratings at 380V

2. CoP = Co-efficient of Performance (CoP = Cooling Capacity (kW) / Power Input (kW))

TABLE 4: DR090 COOLING CAPACITY - IMPERIAL

Air On Evap. Coil		Temperature of Air on Condenser Coil 75°F									Temperature of Air on Condenser Coil 85°F										
CFM	WB (°F)	Tot. Cap. ¹ (MBH)	Tot. Input ² (kW)	Sensible Capacity (MBH) ¹ Return Dry Bulb (°F)							Tot. Cap. ¹ (MBH)	Tot. Input ² (kW)	Sensible Capacity (MBH) ¹ Return Dry Bulb (°F)								
				86	83	80	77	74	71	68			86	83	80	77	74	71	68		
2250	72	114.7	6.4	61.3	56.1	50.9	45.7	40.4	-	-	105.5	7.1	57.9	52.7	47.5	42.2	37.0	-	-	-	
	67	101.8	6.2	74.2	69.0	63.8	58.6	53.3	48.1	42.9	94.3	6.9	71.1	65.8	60.6	55.4	50.1	44.9	39.7		
	62	91.1	6.0	87.3	82.0	76.8	71.5	66.3	61.1	55.8	84.7	6.7	82.9	77.6	72.4	67.2	61.9	56.7	51.5		
2625	57	86.8	6.0	86.8	86.1	80.8	75.6	70.4	65.1	59.9	82.3	6.7	82.3	80.5	75.3	70.0	64.8	59.6	54.3		
	72	118.1	6.6	66.6	60.7	54.8	48.9	42.9	-	-	109.0	7.2	63.3	57.3	51.4	45.5	39.6	-	-		
	67	104.8	6.5	80.5	74.6	68.6	62.7	56.8	50.9	45.0	97.4	7.1	77.5	71.6	65.7	59.7	53.8	47.9	41.9		
3000	62	93.8	6.2	91.9	89.3	82.6	76.7	70.8	64.9	58.9	87.6	6.8	86.6	84.0	78.4	72.5	66.6	60.6	54.7		
	57	89.4	6.2	89.4	89.0	87.0	81.1	75.2	69.3	63.4	85.0	6.8	85.0	84.1	81.5	75.6	69.7	63.7	57.8		
	72	121.5	6.8	71.9	65.3	58.7	52.1	45.5	-	-	112.5	7.4	68.6	62.0	55.4	48.7	42.1	-	-		
3375	67	107.9	6.7	86.7	80.1	73.5	66.9	60.3	53.7	47.1	100.6	7.2	84.0	77.3	70.7	64.1	57.4	50.8	44.2		
	62	96.5	6.5	96.5	96.5	88.5	81.9	75.3	68.7	62.1	90.4	7.0	90.4	90.4	84.5	77.8	71.2	64.6	57.9		
	57	92.0	6.5	92.0	92.0	93.2	86.6	80.0	73.4	66.8	87.8	7.0	87.8	87.8	87.8	81.2	74.5	67.9	61.3		
3750	72	125.3	6.8	77.1	69.9	62.7	55.5	48.4	-	-	115.0	7.4	73.3	66.1	58.9	51.7	44.5	-	-		
	67	111.2	6.7	92.9	85.7	78.6	71.4	64.2	57.1	49.9	102.8	7.2	89.6	82.4	75.2	68.0	60.8	53.6	46.4		
	62	99.5	6.5	99.5	99.5	95.5	88.3	81.1	74.0	66.8	92.4	7.0	92.4	92.4	89.4	82.2	75.1	67.9	60.7		
3750	57	94.9	6.5	94.9	94.9	95.5	88.3	81.1	74.0	66.8	89.7	7.0	89.7	89.7	89.7	82.5	75.3	68.2	61.0		
	72	129.0	6.9	82.2	74.5	66.7	59.0	51.3	-	-	117.5	7.5	77.9	70.2	62.4	54.7	46.9	-	-		
	67	114.5	6.7	99.1	91.4	83.7	75.9	68.2	60.4	52.7	105.0	7.3	95.2	87.5	79.7	72.0	64.2	56.5	48.7		
3750	62	102.5	6.5	102.5	102.5	102.5	94.7	87.0	79.2	71.5	94.4	7.0	94.4	94.4	94.4	86.7	78.9	71.2	63.4		
	57	97.8	6.5	97.8	97.8	97.8	90.0	82.3	74.5	66.8	91.7	7.0	91.7	91.7	91.7	83.9	76.2	68.4	60.7		
		Temperature of Air on Condenser Coil 95°F									Temperature of Air on Condenser Coil 105°F										
2250	72	96.3	7.8	54.5	49.3	44.0	38.8	33.6	-	-	88.4	8.3	52.1	47.0	41.8	36.7	31.6	-	-		
	67	86.8	7.6	67.9	62.7	57.4	52.2	47.0	41.7	36.5	79.1	8.1	64.3	59.2	54.1	49.0	43.8	38.7	33.6		
	62	78.4	7.4	78.4	73.3	68.0	62.8	57.6	52.3	47.1	72.0	7.8	72.0	68.4	63.2	58.1	53.0	47.8	42.7		
2625	57	77.7	7.4	77.7	74.9	69.7	64.4	59.2	54.0	48.7	72.0	7.8	72.0	69.4	64.3	59.1	54.0	48.9	43.8		
	72	99.9	7.9	60.0	54.0	48.1	42.1	36.2	-	-	91.5	8.4	57.4	51.5	45.7	39.9	34.0	-	-		
	67	90.0	7.7	74.6	68.6	62.7	56.7	50.8	44.8	38.9	81.9	8.1	70.7	64.9	59.1	53.2	47.4	41.6	35.8		
3000	62	81.4	7.4	81.4	78.8	74.2	68.3	62.3	56.4	50.4	74.5	7.9	74.5	72.7	69.1	63.2	57.4	51.6	45.7		
	57	80.6	7.4	80.6	79.2	76.0	70.1	64.1	58.2	52.2	74.5	7.9	74.5	73.2	70.2	64.4	58.5	52.7	46.9		
	72	103.5	8.0	65.4	58.7	52.1	45.4	38.7	-	-	94.6	8.5	62.6	56.1	49.5	43.0	36.5	-	-		
3375	67	93.3	7.7	81.2	74.6	67.9	61.3	54.6	47.9	41.3	84.7	8.2	77.1	70.6	64.1	57.5	51.0	44.5	37.9		
	62	84.3	7.5	84.3	84.3	80.4	73.8	67.1	60.5	53.8	77.0	8.0	77.0	77.0	74.9	68.4	61.8	55.3	48.8		
	57	83.5	7.5	83.5	83.5	82.4	75.7	69.1	62.4	55.7	77.0	8.0	77.0	77.0	76.1	69.6	63.1	56.5	50.0		
3750	72	104.8	8.0	69.5	62.3	55.1	47.9	40.7	-	-	95.2	8.6	66.2	59.2	52.2	45.2	38.2	-	-		
	67	94.4	7.8	86.3	79.1	71.9	64.6	57.4	50.2	43.0	85.2	8.3	80.4	74.5	67.5	60.5	53.5	46.5	39.6		
	62	85.4	7.6	85.4	85.4	83.4	76.2	69.0	61.8	54.6	77.5	8.1	77.5	77.5	76.5	69.5	62.5	55.5	48.5		
3750	57	84.6	7.5	84.6	84.6	84.0	76.8	69.6	62.3	55.1	77.6	8.1	77.6	77.6	77.1	70.1	63.1	56.1	49.2		
	72	106.1	8.1	73.6	65.9	58.1	50.3	42.6	-	-	95.9	8.6	69.8	62.3	54.9	47.4	40.0	-	-		
	67	95.6	7.8	91.3	83.6	75.8	68.0	60.3	52.5	44.7	85.8	8.4	83.7	78.4	70.9	63.5	56.1	48.6	41.2		
3750	62	86.4	7.6	86.4	86.4	86.4	78.6	70.9	63.1	55.3	78.1	8.1	78.1	78.1	78.1	70.6	63.2	55.7	48.3		
	57	85.6	7.6	85.6	85.6	85.6	77.8	70.1	62.3	54.5	78.1	8.1	78.1	78.1	78.1	70.6	63.2	55.7	48.3		
		Temperature of Air on Condenser Coil 115°F									Temperature of Air on Condenser Coil 125°F										
2250	72	80.5	8.8	49.7	44.7	39.6	34.6	29.6	-	-	72.6	9.3	47.3	42.3	37.4	32.5	27.6	-	-		
	67	71.4	8.5	60.8	55.7	50.7	45.7	40.7	35.6	30.6	63.8	9.0	57.2	52.3	47.4	42.4	37.5	32.6	27.7		
	62	65.5	8.3	65.5	63.4	58.4	53.4	48.4	43.3	38.3	59.0	8.8	59.0	58.5	53.6	48.7	43.8	38.8	33.9		
2625	57	66.3	8.3	66.3	63.9	58.9	53.9	48.8	43.8	38.8	60.6	8.8	60.6	58.4	53.5	48.6	43.6	38.7	33.8		
	72	83.1	8.9	54.7	49.0	43.3	37.6	31.9	-	-	74.7	9.4	52.1	46.6	41.0	35.4	29.8	-	-		
	67	73.7	8.6	66.9	61.2	55.5	49.7	44.0	38.3	32.6	65.6	9.1	63.0	57.4	51.8	46.3	40.7	35.1	29.5		
3000	62	67.6	8.4	67.6	66.6	63.9	58.2	52.4	46.7	41.0	60.7	8.9	60.7	60.4	58.7	53.1	47.5	41.9	36.3		
	57	68.4	8.4	68.4	67.2	64.4	58.7	53.0	47.2	41.5	62.3	8.9	62.3	61.2	58.6	53.0	47.4	41.8	36.2		
	72	85.7	9.0	59.8	53.4	47.0	40.6	34.2	-	-	76.7	9.5	57.0	50.8	44.5	38.2	32.0	-	-		
3375	67	76.0	8.7	73.0	66.6	60.2	53.8	47.4	41.0	34.6	67.4	9.2	67.4	62.6	56.3	50.1	43.8	37.5	31.3		
	62	69.7	8.5	69.7	69.7	69.3	62.9	56.5	50.1	43.7	62.4	9.0	62.4	62.4	62.4	57.5	51.2	45.0	38.7		
	57	70.5	8.5	70.5	70.5	69.9	63.5	57.1	50.7	44.3	64.0	9.0	64.0	64.0	63.6	57.4	51.1	44.8	38.6		
3750	72	85.7	9.1	62.8	56.1	49.3	42.6	35.8	-	-	76.1	9.7	59.5	53.0	46.5	39.9	33.4	-	-		
	67	76.0	8.8	74.5	69.9	63.1	56.4	49.6	42.9	36.1	66.8	9.3	66.8	65.3	58.8	52.3	45.7	39.2	32.7		
	62	69.7	8.6	69.7	69.7	69.5	62.8	56.0	49.2	42.5	61.9	9.1	61.9	61.9	61.9	56.0	49.5	43.0	36.5		
3750	57	70.5	8.6	70.5	70.5	70.2	63.5	56.7	49.9	43.2	63.5	9.1	63.5	63.5	63.3	56.8	50.3	43.7	37.2		
	72	85.7	9.2	65.9	58.8	51.6	44.5	37.4	-	-	75.5	9.8	62.0	55.2	48.4	41.6	34.8	-	-		
	67	76.1	8.9	76.1	73.2	66.1	59.0	51.8	44.7	37.6	66.3	9.4	66.3	66.3	61.2	54.4	47.6	40.8	34.0		
3750	62	69.7	8.7	69.7	69.7	69.7	62.6	55.5	48.4	41.2	61.4	9.2	61.4	61.4	61.4	54.6	47.8	41.0	34.2		
	57	70.6	8.7	70.6	70.6	70.6	63.4	56.3	49.2	42.1	63.0	9.2	63.0	63.0	63.0	56.2	49.4	42.6	35.8		

TABLE 5: DR090 COOLING CAPACITY - METRIC

Air On Evap. Coil		Temperature of Air on Condenser Coil 24°C										Temperature of Air on Condenser Coil 29°C									
m³/s	WB (°C)	Tot. Cap. ¹ (kW)	Tot. Input ² (kW)	Sensible Capacity (kW) ¹ Return Dry Bulb (°F)								Tot. Cap. ¹ (kW)	Tot. Input ² (kW)	Sensible Capacity (kW) ¹ Return Dry Bulb (°C)							
				30	28	27	25	23	22	20	30			28	27	25	23	22	20		
1.06	22	34	6.4	18.0	16.4	14.9	13.4	11.8	-	-	31	7.1	17.0	15.4	13.9	12.4	10.8	-	-		
	19	30	6.2	21.8	20.2	18.7	17.2	15.6	14.1	12.6	28	6.9	20.8	19.3	17.8	16.2	14.7	13.2	11.6		
	17	27	6.0	25.6	24.0	22.5	21.0	19.4	17.9	16.4	25	6.7	24.3	22.8	21.2	19.7	18.2	16.6	15.1		
	14	25	6.0	25.5	25.2	23.7	22.2	20.6	19.1	17.6	24	6.7	24.1	23.6	22.1	20.5	19.0	17.5	15.9		
1.24	22	35	6.6	19.5	17.8	16.1	14.3	12.6	-	-	32	7.2	18.5	16.8	15.1	13.3	11.6	-	-		
	19	31	6.5	23.6	21.8	20.1	18.4	16.6	14.9	13.2	29	7.1	22.7	21.0	19.2	17.5	15.8	14.0	12.3		
	17	27	6.2	26.9	26.2	24.2	22.5	20.7	19.0	17.3	26	6.8	25.4	24.6	23.0	21.2	19.5	17.8	16.0		
	14	26	6.2	26.2	26.1	25.5	23.8	22.0	20.3	18.6	25	6.8	24.9	24.7	23.9	22.2	20.4	18.7	16.9		
1.42	22	36	6.8	21.1	19.1	17.2	15.3	13.3	-	-	33	7.4	20.1	18.2	16.2	14.3	12.3	-	-		
	19	32	6.7	25.4	23.5	21.5	19.6	17.7	15.7	13.8	29	7.2	24.6	22.7	20.7	18.8	16.8	14.9	12.9		
	17	28	6.5	28.3	28.3	25.9	24.0	22.1	20.1	18.2	26	7.0	26.5	26.5	24.8	22.8	20.9	18.9	17.0		
	14	27	6.5	27.0	27.0	27.3	25.4	23.4	21.5	19.6	26	7.0	25.7	25.7	25.7	23.8	21.8	19.9	18.0		
1.59	22	37	6.8	22.6	20.5	18.4	16.3	14.2	-	-	34	7.4	21.5	19.4	17.3	15.2	13.0	-	-		
	19	33	6.7	27.2	25.1	23.0	20.9	18.8	16.7	14.6	30	7.2	26.3	24.2	22.0	19.9	17.8	15.7	13.6		
	17	29	6.5	29.2	29.2	28.0	25.9	23.8	21.7	19.6	27	7.0	27.1	27.1	26.2	24.1	22.0	19.9	17.8		
	14	28	6.5	27.8	27.8	28.0	25.9	23.8	21.7	19.6	26	7.0	26.3	26.3	26.3	24.2	22.1	20.0	17.9		
1.77	22	38	6.9	24.1	21.8	19.6	17.3	15.0	-	-	34	7.5	22.8	20.6	18.3	16.0	13.8	-	-		
	19	34	6.7	29.1	26.8	24.5	22.2	20.0	17.7	15.4	31	7.3	27.9	25.6	23.4	21.1	18.8	16.5	14.3		
	17	30	6.5	30.0	30.0	30.0	27.8	25.5	23.2	21.0	28	7.0	27.7	27.7	27.7	25.4	23.1	20.9	18.6		
	14	29	6.5	28.7	28.7	28.7	26.4	24.1	21.8	19.6	27	7.0	26.9	26.9	26.9	24.6	22.3	20.1	17.8		
		Temperature of Air on Condenser Coil 35°C										Temperature of Air on Condenser Coil 41°C									
1.06	22	28	7.8	16.0	14.4	12.9	11.4	9.8	-	-	26	8.3	15.3	13.8	12.3	10.8	9.3	-	-		
	19	25	7.6	19.9	18.4	16.8	15.3	13.8	12.2	10.7	23	8.1	18.9	17.4	15.9	14.3	12.8	11.3	9.8		
	17	23	7.4	23.0	21.5	19.9	18.4	16.9	15.3	13.8	21	7.8	21.1	20.0	18.5	17.0	15.5	14.0	12.5		
	14	23	7.4	22.8	22.0	20.4	18.9	17.4	15.8	14.3	21	7.8	21.1	20.3	18.8	17.3	15.8	14.3	12.8		
1.24	22	29	7.9	17.6	15.8	14.1	12.3	10.6	-	-	27	8.4	16.8	15.1	13.4	11.7	10.0	-	-		
	19	26	7.7	21.9	20.1	18.4	16.6	14.9	13.1	11.4	24	8.1	20.7	19.0	17.3	15.6	13.9	12.2	10.5		
	17	24	7.4	23.8	23.1	21.8	20.0	18.3	16.5	14.8	22	7.9	21.8	21.3	20.2	18.5	16.8	15.1	13.4		
	14	24	7.4	23.6	23.2	22.3	20.5	18.8	17.1	15.3	22	7.9	21.8	21.5	20.6	18.9	17.2	15.4	13.7		
1.42	22	30	8.0	19.2	17.2	15.3	13.3	11.4	-	-	28	8.5	18.3	16.4	14.5	12.6	10.7	-	-		
	19	27	7.7	23.8	21.9	19.9	18.0	16.0	14.0	12.1	25	8.2	22.6	20.7	18.8	16.9	14.9	13.0	11.1		
	17	25	7.5	24.7	24.7	23.6	21.6	19.7	17.7	15.8	23	8.0	22.6	22.6	21.9	20.0	18.1	16.2	14.3		
	14	24	7.5	24.5	24.5	24.1	22.2	20.2	18.3	16.3	23	8.0	22.6	22.6	22.3	20.4	18.5	16.6	14.7		
1.59	22	31	8.0	20.4	18.3	16.1	14.0	11.9	-	-	28	8.6	19.4	17.3	15.3	13.3	11.2	-	-		
	19	28	7.8	25.3	23.2	21.1	18.9	16.8	14.7	12.6	25	8.3	23.6	21.8	19.8	17.7	15.7	13.6	11.6		
	17	25	7.6	25.0	25.0	24.4	22.3	20.2	18.1	16.0	23	8.1	22.7	22.7	22.4	20.4	18.3	16.3	14.2		
	14	25	7.5	24.8	24.8	24.6	22.5	20.4	18.3	16.2	23	8.1	22.7	22.7	22.6	20.5	18.5	16.5	14.4		
1.77	22	31	8.1	21.6	19.3	17.0	14.8	12.5	-	-	28	8.6	20.4	18.3	16.1	13.9	11.7	-	-		
	19	28	7.8	26.8	24.5	22.2	19.9	17.7	15.4	13.1	25	8.4	24.5	23.0	20.8	18.6	16.4	14.2	12.1		
	17	25	7.6	25.3	25.3	25.3	23.0	20.8	18.5	16.2	23	8.1	22.9	22.9	22.9	20.7	18.5	16.3	14.1		
	14	25	7.6	25.1	25.1	25.1	22.8	20.5	18.3	16.0	23	8.1	22.9	22.9	22.9	20.7	18.5	16.3	14.2		
		Temperature of Air on Condenser Coil 46°C										Temperature of Air on Condenser Coil 52°C									
1.06	22	24	8.8	14.6	13.1	11.6	10.1	8.7	-	-	21	9.3	13.9	12.4	11.0	9.5	8.1	-	-		
	19	21	8.5	17.8	16.3	14.9	13.4	11.9	10.4	9.0	19	9.0	16.8	15.3	13.9	12.4	11.0	9.6	8.1		
	17	19	8.3	19.2	18.6	17.1	15.6	14.2	12.7	11.2	17	8.8	17.3	17.2	15.7	14.3	12.8	11.4	9.9		
	14	19	8.3	19.4	18.7	17.3	15.8	14.3	12.8	11.4	18	8.8	17.7	17.1	15.7	14.2	12.8	11.3	9.9		
1.24	22	24	8.9	16.0	14.4	12.7	11.0	9.4	-	-	22	9.4	15.3	13.6	12.0	10.4	8.7	-	-		
	19	22	8.6	19.6	17.9	16.3	14.6	12.9	11.2	9.6	19	9.1	18.5	16.8	15.2	13.6	11.9	10.3	8.6		
	17	20	8.4	19.8	19.5	18.7	17.0	15.4	13.7	12.0	18	8.9	17.8	17.7	17.2	15.6	13.9	12.3	10.6		
	14	20	8.4	20.0	19.7	18.9	17.2	15.5	13.8	12.2	18	8.9	18.3	17.9	17.2	15.5	13.9	12.2	10.6		
1.42	22	25	9.0	17.5	15.7	13.8	11.9	10.0	-	-	22	9.5	16.7	14.9	13.0	11.2	9.4	-	-		
	19	22	8.7	21.4	19.5	17.6	15.8	13.9	12.0	10.1	20	9.2	19.7	18.3	16.5	14.7	12.8	11.0	9.2		
	17	20	8.5	20.4	20.4	20.3	18.4	16.6	14.7	12.8	18	9.0	18.3	18.3	18.3	16.9	15.0	13.2	11.3		
	14	21	8.5	20.7	20.7	20.5	18.6	16.7	14.9	13.0	19	9.0	18.8	18.8	18.6	16.8	15.0	13.1	11.3		
1.59	22	25	9.1	18.4	16.4	14.5	12.5	10.5	-	-	22	9.7	17.4	15.5	13.6	11.7	9.8	-	-		
	19	22	8.8	21.8	20.5	18.5	16.5	14.5	12.6	10.6	20	9.3	19.6	19.1	17.2	15.3	13.4	11.5	9.6		
	17	20	8.6	20.4	20.4	20.4	18.4	16.4	14.4	12.5	18	9.1	18.1	18.1	18.1	16.4	14.5	12.6	10.7		
	14	21	8.6	20.7	20.7	20.6	18.6	16.6	14.6	12.7	19	9.1	18.6	18.6	18.6	16.6	14.7	12.8	10.9		
1.77	22	25	9.2	19.3	17.2	15.1	13.0	11.0	-	-	22	9.8	18.2	16.2	14.2	12.2	10.2	-	-		
	19	22	8.9	22.3	21.5	19.4	17.3	15.2	13.1	11.0	19	9.4	19.4	19.4	17.9	16.0	14.0	12.0	10.0		
	17	20	8.7	20.4	20.4	20.4	18.3	16.3	14.2	12.1	18	9.2	18.0	18.0	18.0	16.0	14.0	12.0	10.0		
	14	21	8.7	20.7	20.7	20.7	18.6	16.5	14.4	12.3	18	9.2	18.5	18.5	18.5	16.5	14.5	12.5	10.5		

TABLE 6: DR090 COOLING CAPACITY (ALTERNATE REHEAT MODE) - IMPERIAL

Air On Evap. Coil		Temperature of Air on Condenser Coil 75°F									Temperature of Air on Condenser Coil 85°F										
CFM	WB (°F)	Tot. Cap. ¹ (MBH)	Tot. Input ² (kW)	Sensible Capacity (MBH) ¹ Return Dry Bulb (°F)								Tot. Cap. ¹ (MBH)	Tot. Input ² (kW)	Sensible Capacity (MBH) ¹ Return Dry Bulb (°F)							
				86	83	80	77	74	71	68	86			83	80	77	74	71	68		
2250	72	48.7	6.8	-	-	-	-	-	-	-	43.6	7.0	-	-	-	-	-	-	-		
	67	43.9	6.4	8.0	7.4	6.9	6.3	5.7	5.2	4.6	39.0	6.7	4.9	4.6	4.2	3.9	3.6	3.2	2.9		
	62	40.2	6.2	18.0	17.4	16.8	16.3	15.7	15.2	14.6	34.6	6.4	12.0	11.7	11.4	11.0	10.7	10.3	10.0		
2625	57	40.8	5.8	23.4	22.8	22.2	21.7	21.1	20.6	20.0	37.1	6.0	15.6	15.2	14.9	14.6	14.2	13.9	13.5		
	72	50.8	6.8	-	-	-	-	-	-	-	45.4	7.1	-	-	-	-	-	-	-		
	67	45.7	6.4	12.6	11.7	10.8	9.9	9.0	8.1	7.2	40.5	6.7	9.0	8.4	7.7	7.1	6.4	5.8	5.1		
3000	62	41.9	6.2	26.4	25.5	24.6	23.7	22.8	21.9	21.0	36.0	6.4	21.9	21.3	20.6	20.0	19.3	18.7	18.0		
	57	42.6	5.8	33.8	33.6	32.8	31.8	30.9	30.0	29.1	38.6	6.1	27.8	27.6	27.1	26.4	25.8	25.1	24.5		
	72	52.9	6.7	-	-	-	-	-	-	-	47.1	7.1	-	-	-	-	-	-	-		
3375	67	47.6	6.4	17.3	16.0	14.8	13.5	12.2	11.0	9.7	42.1	6.7	13.1	12.2	11.2	10.2	9.3	8.3	7.4		
	62	43.6	6.2	34.9	33.7	32.4	31.2	29.9	28.6	27.4	37.4	6.5	31.8	30.9	29.9	29.0	28.0	27.1	26.1		
	57	44.3	5.8	44.3	44.3	43.3	42.0	40.7	39.5	38.2	40.0	6.1	40.0	40.0	39.3	38.3	37.4	36.4	35.4		
3750	72	54.6	6.7	-	-	-	-	-	-	-	48.5	7.1	-	-	-	-	-	-	-		
	67	49.2	6.4	20.3	18.8	17.3	15.7	14.2	12.7	11.2	43.3	6.8	16.0	14.8	13.6	12.4	11.2	10.0	8.9		
	62	45.0	6.2	40.7	40.0	39.4	37.9	36.4	34.8	33.3	38.5	6.5	35.7	35.2	34.7	33.6	32.4	31.2	30.0		
3750	57	45.8	5.8	45.8	45.8	45.2	43.7	42.2	40.7	39.2	41.2	6.1	41.2	41.2	40.8	39.6	38.4	37.2	36.0		
	72	56.3	6.7	-	-	-	-	-	-	-	49.8	7.1	-	-	-	-	-	-	-		
	67	50.7	6.4	23.3	21.6	19.8	18.0	16.2	14.5	12.7	44.5	6.8	18.9	17.4	16.0	14.6	13.2	11.8	10.3		
3750	62	46.4	6.2	46.4	46.4	46.4	44.6	42.8	41.1	39.3	39.6	6.5	39.6	39.6	39.6	38.1	36.7	35.3	33.9		
	57	47.2	5.7	47.2	47.2	47.2	45.4	43.6	41.9	40.1	42.3	6.1	42.3	42.3	42.3	40.9	39.5	38.1	36.6		
		Temperature of Air on Condenser Coil 95°F									Temperature of Air on Condenser Coil 105°F										
2250	72	38.6	7.3	-	-	-	-	-	-	-	33.9	7.6	12.9	13.0	13.1	13.1	13.2	-	-		
	67	34.1	7.0	1.9	1.8	1.6	1.5	1.4	1.2	1.1	29.5	7.3	-	-	-	-	-	-	-		
	62	29.1	6.7	6.1	6.0	5.9	5.8	5.6	5.5	5.4	25.2	6.9	-	-	-	-	-	-	-		
2625	57	33.4	6.3	7.8	7.7	7.6	7.4	7.3	7.2	7.0	29.3	6.6	-	-	-	-	-	-	-		
	72	40.0	7.3	-	-	-	-	-	-	-	35.0	7.7	-	-	-	-	-	-	-		
	67	35.3	7.0	5.4	5.0	4.6	4.2	3.9	3.5	3.1	30.5	7.3	2.4	2.2	2.0	1.8	1.7	1.5	1.3		
3000	62	30.2	6.7	17.5	17.1	16.7	16.3	15.9	15.5	15.1	26.0	7.0	5.8	5.6	5.4	5.2	5.1	4.9	4.7		
	57	34.6	6.3	21.8	21.7	21.4	21.0	20.6	20.2	19.9	30.3	6.6	6.8	6.8	6.8	6.6	6.4	6.3	6.1		
	72	41.3	7.4	-	-	-	-	-	-	-	36.2	7.7	-	-	-	-	-	-	-		
3375	67	36.6	7.1	8.9	8.3	7.6	7.0	6.3	5.7	5.0	31.4	7.3	5.7	5.3	4.9	4.4	4.0	3.6	3.2		
	62	31.2	6.7	28.8	28.1	27.5	26.8	26.1	25.5	24.8	26.9	7.0	24.4	24.0	23.6	23.2	22.8	22.4	22.0		
	57	35.8	6.4	35.8	35.8	35.3	34.6	34.0	33.3	32.7	31.3	6.7	31.3	31.3	31.0	30.6	30.2	29.8	29.4		
3750	72	42.3	7.4	-	-	-	-	-	-	-	36.4	7.7	-	-	-	-	-	-	-		
	67	37.4	7.1	11.7	10.8	9.9	9.1	8.2	7.4	6.5	31.6	7.4	7.7	7.1	6.6	6.0	5.4	4.9	4.3		
	62	32.0	6.8	30.7	30.4	30.1	29.2	28.4	27.5	26.7	27.0	7.1	25.8	25.6	25.4	24.8	24.3	23.7	23.2		
3750	57	36.6	6.4	36.6	36.6	36.4	35.5	34.7	33.8	32.9	31.4	6.7	31.4	31.4	31.3	30.8	30.2	29.6	29.1		
	72	43.3	7.5	-	-	-	-	-	-	-	36.6	7.8	-	-	-	-	-	-	-		
	67	38.3	7.2	14.4	13.3	12.3	11.2	10.1	9.1	8.0	31.8	7.4	9.6	8.9	8.2	7.5	6.8	6.1	5.4		
3750	62	32.7	6.8	32.7	32.7	32.7	31.7	30.6	29.5	28.5	27.2	7.1	27.2	27.2	27.2	26.5	25.8	25.1	24.4		
	57	37.5	6.4	37.5	37.5	37.5	36.4	35.3	34.3	33.2	31.6	6.8	31.6	31.6	31.6	30.9	30.2	29.5	28.8		
		Temperature of Air on Condenser Coil 115°F									Temperature of Air on Condenser Coil 125°F										
2250	72	29.3	7.9	28.2	28.5	28.8	29.0	29.3	-	-	24.6	8.3	24.6	24.6	24.6	24.6	-	-	-		
	67	24.9	7.5	-	-	-	-	-	-	-	20.2	7.8	-	-	-	-	-	-	-		
	62	21.3	7.2	-	-	-	-	-	-	-	17.3	7.5	-	-	-	-	-	-	-		
2625	57	25.3	6.9	-	-	-	-	-	-	-	21.2	7.2	-	-	-	-	-	-	-		
	72	30.1	8.0	5.2	5.3	5.3	5.4	5.4	-	-	25.2	8.3	11.2	11.4	11.7	12.0	12.2	-	-		
	67	25.6	7.6	-	-	-	-	-	-	-	20.7	7.8	-	-	-	-	-	-	-		
3000	62	21.9	7.2	-	-	-	-	-	-	-	17.7	7.5	-	-	-	-	-	-	-		
	57	26.0	7.0	-	-	-	-	-	-	-	21.8	7.3	-	-	-	-	-	-	-		
	72	31.0	8.0	-	-	-	-	-	-	-	25.8	8.3	-	-	-	-	-	-	-		
3375	67	26.3	7.6	2.4	2.3	2.1	1.9	1.7	1.6	1.4	21.2	7.9	-	-	-	-	-	-	-		
	62	22.5	7.3	20.1	19.9	19.8	19.6	19.4	19.2	19.1	18.1	7.6	15.8	15.8	15.9	16.0	16.0	16.1	16.2		
	57	26.8	7.0	26.8	26.8	26.6	26.4	26.2	26.1		22.3	7.3	22.3	22.3	22.3	22.3	22.3	22.3	22.3		
3750	72	30.4	8.1	-	-	-	-	-	-	-	24.4	8.4	-	-	-	-	-	-	-		
	67	25.8	7.7	3.7	3.4	3.2	2.9	2.6	2.4	2.1	20.0	7.9	-	-	-	-	-	-	-		
	62	22.1	7.3	20.9	20.8	20.7	20.4	20.2	19.9	19.7	17.1	7.6	16.0	16.0	16.0	16.1	16.1	16.1	16.2		
3750	57	26.3	7.0	26.3	26.3	26.3	26.0	25.7	25.5	25.2	21.1	7.4	21.1	21.1	21.1	21.1	21.1	21.1	21.1		
	72	29.8	8.1	-	-	-	-	-	-	-	23.1	8.5	-	-	-	-	-	-	-		
	67	25.3	7.7	4.9	4.6	4.2	3.9	3.5	3.2	2.9	18.8	8.0	0.2	0.2	0.2	0.2	0.2	0.3	0.3		
3750	62	21.7	7.4	21.7	21.7	21.7	21.3	21.0	20.6	20.3	16.1	7.7	16.1	16.1	16.1	16.1	16.1	16.1	16.1		
	57	25.8	7.1	25.8	25.8	25.8	25.4	25.1	24.7	24.4	19.9	7.4	19.9	19.9	19.9	19.9	19.9	19.9	19.9		

- These capacities are gross ratings. For net capacity, deduct air blower motor, MBH = 3.415 x kW. Refer to the appropriate Blower Performance Table for the kW of the supply air blower motor.
- These ratings include the condenser fan motors (total 1 kW) and the compressor motors but not the supply air blower motor.

TABLE 7: DR090 COOLING CAPACITY (ALTERNATE REHEAT MODE) - METRIC

Air On Evap. Coil		Temperature of Air on Condenser Coil 24°C									Temperature of Air on Condenser Coil 29°C								
m³/s	WB (°C)	Tot. Cap. ¹ (kW)	Tot. Input ² (kW)	Sensible Capacity (kW) ¹ Return Dry Bulb (°F)							Tot. Cap. ¹ (kW)	Tot. Input ² (kW)	Sensible Capacity (kW) ¹ Return Dry Bulb (°C)						
				30	28	27	25	23	22	20			30	28	27	25	23	22	20
1.06	22	14	6.8	-	-	-	-	-	-	-	13	7.0	-	-	-	-	-	-	-
	19	13	6.4	2.3	2.2	2.0	1.8	1.7	1.5	1.4	11	6.7	1.4	1.3	1.2	1.1	1.0	0.9	0.8
	17	12	6.2	5.3	5.1	4.9	4.8	4.6	4.4	4.3	10	6.4	3.5	3.4	3.3	3.2	3.1	3.0	2.9
	14	12	5.8	6.8	6.7	6.5	6.4	6.2	6.0	5.9	11	6.0	4.6	4.5	4.4	4.3	4.2	4.1	4.0
1.24	22	15	6.8	-	-	-	-	-	-	-	13	7.1	-	-	-	-	-	-	-
	19	13	6.4	3.7	3.4	3.2	2.9	2.6	2.4	2.1	12	6.7	2.6	2.5	2.3	2.1	1.9	1.7	1.5
	17	12	6.2	7.7	7.5	7.2	6.9	6.7	6.4	6.2	11	6.4	6.4	6.2	6.1	5.9	5.7	5.5	5.3
	14	12	5.8	9.9	9.8	9.6	9.3	9.1	8.8	8.5	11	6.1	8.2	8.1	7.9	7.7	7.6	7.4	7.2
1.42	22	16	6.7	-	-	-	-	-	-	-	14	7.1	-	-	-	-	-	-	-
	19	14	6.4	5.1	4.7	4.3	4.0	3.6	3.2	2.8	12	6.7	3.8	3.6	3.3	3.0	2.7	2.4	2.2
	17	13	6.2	10.2	9.9	9.5	9.1	8.8	8.4	8.0	11	6.5	9.3	9.1	8.8	8.5	8.2	7.9	7.7
	14	13	5.8	13.0	13.0	12.7	12.3	11.9	11.6	11.2	12	6.1	11.7	11.7	11.5	11.2	10.9	10.7	10.4
1.59	22	16	6.7	-	-	-	-	-	-	-	14	7.1	-	-	-	-	-	-	-
	19	14	6.4	5.9	5.5	5.1	4.6	4.2	3.7	3.3	13	6.8	4.7	4.3	4.0	3.6	3.3	2.9	2.6
	17	13	6.2	11.9	11.7	11.5	11.1	10.7	10.2	9.8	11	6.5	10.5	10.3	10.2	9.8	9.5	9.1	8.8
	14	13	5.8	13.4	13.4	13.3	12.8	12.4	11.9	11.5	12	6.1	12.1	12.1	12.0	11.6	11.3	10.9	10.6
1.77	22	17	6.7	-	-	-	-	-	-	-	15	7.1	-	-	-	-	-	-	-
	19	15	6.4	6.8	6.3	5.8	5.3	4.8	4.2	3.7	13	6.8	5.5	5.1	4.7	4.3	3.9	3.4	3.0
	17	14	6.2	13.6	13.6	13.6	13.1	12.6	12.0	11.5	12	6.5	11.6	11.6	11.6	11.2	10.8	10.3	9.9
	14	14	5.7	13.8	13.8	13.8	13.3	12.8	12.3	11.7	12	6.1	12.4	12.4	12.4	12.0	11.6	11.2	10.7
		Temperature of Air on Condenser Coil 35°C									Temperature of Air on Condenser Coil 41°C								
1.06	22	11	7.3	-	-	-	-	-	-	-	10	7.6	3.8	3.8	3.8	3.9	3.9	-	-
	19	10	7.0	0.6	0.5	0.5	0.4	0.4	0.4	0.3	9	7.3	-	-	-	-	-	-	-
	17	9	6.7	1.8	1.8	1.7	1.7	1.6	1.6	1.6	7	6.9	-	-	-	-	-	-	-
	14	10	6.3	2.3	2.3	2.2	2.2	2.1	2.1	2.1	9	6.6	-	-	-	-	-	-	-
1.24	22	12	7.3	-	-	-	-	-	-	-	10	7.7	-	-	-	-	-	-	-
	19	10	7.0	1.6	1.5	1.4	1.2	1.1	1.0	0.9	9	7.3	0.7	0.6	0.6	0.5	0.5	0.4	0.4
	17	9	6.7	5.1	5.0	4.9	4.8	4.7	4.5	4.4	8	7.0	1.7	1.6	1.6	1.5	1.5	1.4	1.4
	14	10	6.3	6.4	6.4	6.3	6.2	6.0	5.9	5.8	9	6.6	2.0	2.0	2.0	1.9	1.9	1.8	1.8
1.42	22	12	7.4	-	-	-	-	-	-	-	11	7.7	-	-	-	-	-	-	-
	19	11	7.1	2.6	2.4	2.2	2.0	1.9	1.7	1.5	9	7.3	1.7	1.5	1.4	1.3	1.2	1.1	0.9
	17	9	6.7	8.4	8.2	8.0	7.9	7.7	7.5	7.3	8	7.0	7.2	7.0	6.9	6.8	6.7	6.6	6.4
	14	10	6.4	10.5	10.5	10.3	10.2	10.0	9.8	9.6	9	6.7	9.2	9.2	9.1	9.0	8.9	8.7	8.6
1.59	22	12	7.4	-	-	-	-	-	-	-	11	7.7	-	-	-	-	-	-	-
	19	11	7.1	3.4	3.2	2.9	2.7	2.4	2.2	1.9	9	7.4	2.2	2.1	1.9	1.8	1.6	1.4	1.3
	17	9	6.8	9.0	8.9	8.8	8.6	8.3	8.1	7.8	8	7.1	7.6	7.5	7.4	7.3	7.1	7.0	6.8
	14	11	6.4	10.7	10.7	10.7	10.4	10.2	9.9	9.7	9	6.7	9.2	9.2	9.2	9.0	8.9	8.7	8.5
1.77	22	13	7.5	-	-	-	-	-	-	-	11	7.8	-	-	-	-	-	-	-
	19	11	7.2	4.2	3.9	3.6	3.3	3.0	2.7	2.3	9	7.4	2.8	2.6	2.4	2.2	2.0	1.8	1.6
	17	10	6.8	9.6	9.6	9.6	9.3	9.0	8.7	8.3	8	7.1	8.0	8.0	8.0	7.8	7.6	7.4	7.1
	14	11	6.4	11.0	11.0	11.0	10.7	10.4	10.0	9.7	9	6.8	9.3	9.3	9.3	9.1	8.9	8.6	8.4
		Temperature of Air on Condenser Coil 46°C									Temperature of Air on Condenser Coil 52°C								
1.06	22	9	7.9	8.3	8.4	8.4	8.5	8.6	-	-	7	8.3	7.2	7.2	7.2	7.2	7.2	-	-
	19	7	7.5	-	-	-	-	-	-	-	6	7.8	-	-	-	-	-	-	-
	17	6	7.2	-	-	-	-	-	-	-	5	7.5	-	-	-	-	-	-	-
	14	7	6.9	-	-	-	-	-	-	-	6	7.2	-	-	-	-	-	-	-
1.24	22	9	8.0	1.5	1.5	1.6	1.6	1.6	-	-	7	8.3	3.3	3.4	3.4	3.5	3.6	-	-
	19	7	7.6	-	-	-	-	-	-	-	6	7.8	-	-	-	-	-	-	-
	17	6	7.2	-	-	-	-	-	-	-	5	7.5	-	-	-	-	-	-	-
	14	8	7.0	-	-	-	-	-	-	-	6	7.3	-	-	-	-	-	-	-
1.42	22	9	8.0	-	-	-	-	-	-	-	8	8.3	-	-	-	-	-	-	-
	19	8	7.6	0.7	0.7	0.6	0.6	0.5	0.5	0.4	6	7.9	-	-	-	-	-	-	-
	17	7	7.3	5.9	5.8	5.8	5.7	5.7	5.6	5.6	5	7.6	4.6	4.6	4.7	4.7	4.7	4.7	4.7
	14	8	7.0	7.8	7.8	7.8	7.8	7.7	7.7	7.6	7	7.3	6.5	6.5	6.5	6.5	6.5	6.5	6.5
1.59	22	9	8.1	-	-	-	-	-	-	-	7	8.4	-	-	-	-	-	-	-
	19	8	7.7	1.1	1.0	0.9	0.8	0.8	0.7	0.6	6	7.9	-	-	-	-	-	-	-
	17	6	7.3	6.1	6.1	6.1	6.0	5.9	5.8	5.8	5	7.6	4.7	4.7	4.7	4.7	4.7	4.7	4.7
	14	8	7.0	7.7	7.7	7.7	7.6	7.5	7.5	7.4	6	7.4	6.2	6.2	6.2	6.2	6.2	6.2	6.2
1.77	22	9	8.1	-	-	-	-	-	-	-	7	8.5	-	-	-	-	-	-	-
	19	7	7.7	1.4	1.3	1.2	1.1	1.0	0.9	0.8	6	8.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	17	6	7.4	6.3	6.3	6.3	6.2	6.1	6.0	5.9	5	7.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
	14	8	7.1	7.6	7.6	7.6	7.4	7.3	7.2	7.1	6	7.4	5.8	5.8	5.8	5.8	5.8	5.8	5.8

1. These capacities are gross ratings. For net capacity, deduct air blower motor, MBh = 3.415 x kW. Refer to the appropriate Blower Performance Table for the kW of the supply air blower motor.

2. These ratings include the condenser fan motors (total 1 kW) and the compressor motors but not the supply air blower motor.

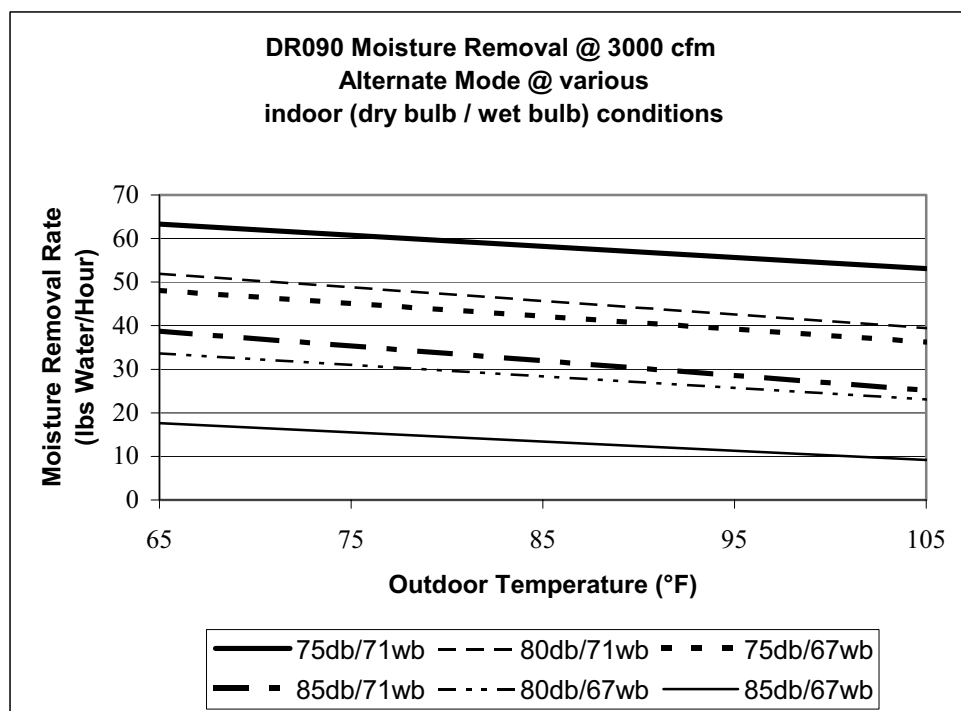


FIGURE 4 - DR090 MOISTURE REMOVAL (ALTERNATE MODE) - IMPERIAL

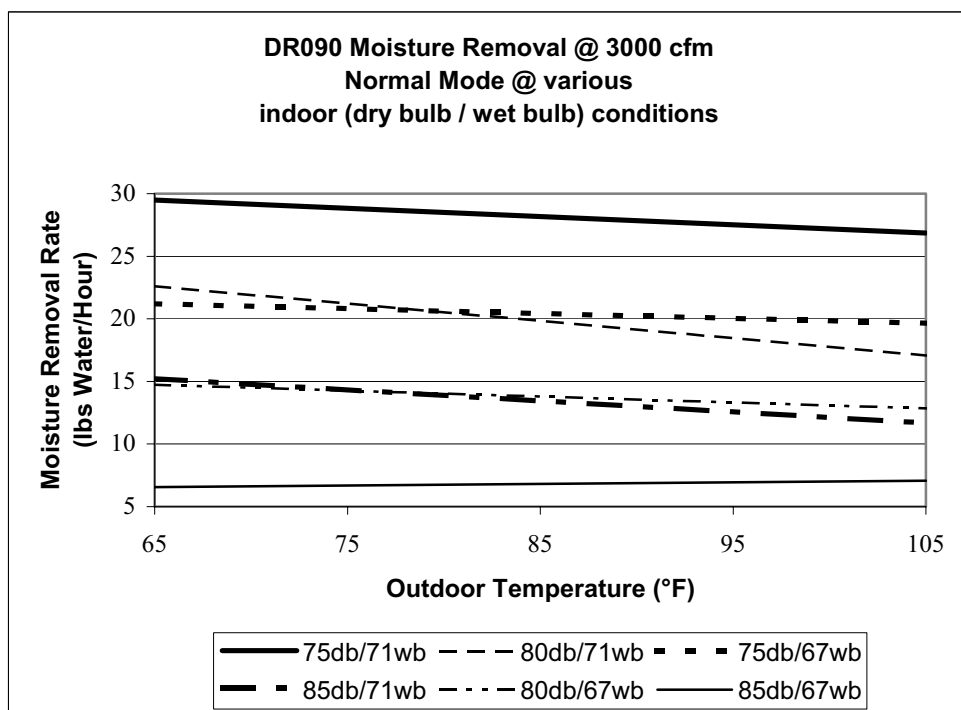


FIGURE 5 - DR090 MOISTURE REMOVAL (NORMAL MODE) - IMPERIAL

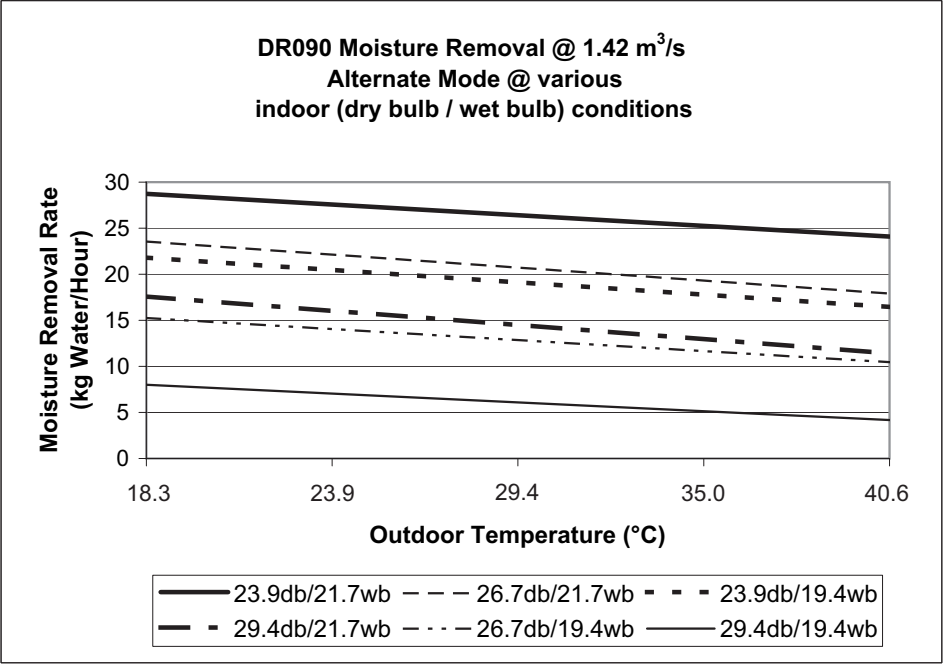


FIGURE 6 - DR090 MOISTURE REMOVAL (ALTERNATE MODE) - METRIC

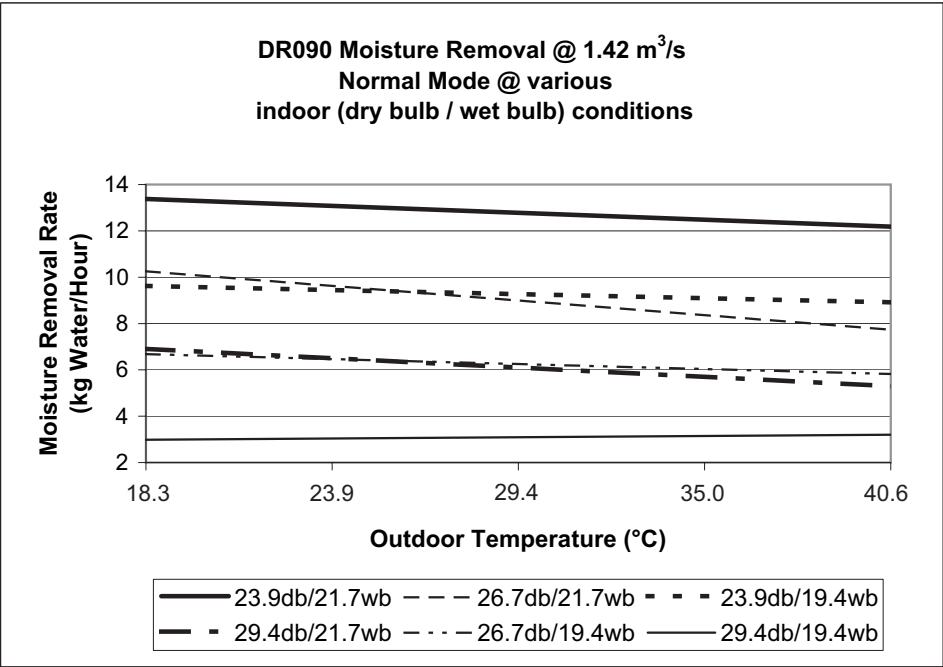


FIGURE 7 - DR090 MOISTURE REMOVAL (NORMAL MODE) - METRIC

TABLE 8: ELECTRICAL DATA 7-1/2 TON

Voltage ¹	Compressors		OD Fan Motors	Supply Blower Motor FLA		Pwr Exh Motor	Electric Heater Model No.	Actual kW	Heater Amps	Min. Circuit Ampacity (Amps)		MCA w/Power Exhaust (Amps)		Max Fuse ² Size (Amps)		Max Fuse Size w/Power Exhaust (Amps)	
	RLA ea.	LRA ea.	FLA ea.	1.5 HP	2 HP	FLA				1.5 HP	2 HP	1.5 HP	2 HP	1.5 HP	2 HP	1.5 HP	2 HP
380	7.3	58.0	1.1	4.3	5.2	2.2	None	--	--	22.9	23.8	25.1	26.0	30	30	30	30
							2TP04520950	5.6	8.5	22.9	23.8	25.1	26.0	30	30	30	30
							2TP04521850	11.3	17.2	26.8	28.0	29.6	30.7	30	30	30	35
							2TP04522450	15.0	22.8	33.9	35.0	36.6	37.7	35	35	40	40
							2TP04523650	21.3	32.4	45.8	47.0	48.6	49.7	50	50	50	50
415	7.3	58.0	1.1	4.3	5.2	2.2	None	--	--	22.9	23.8	25.1	26.0	30	30	30	30
							2TP04520950	6.7	9.3	22.9	23.8	25.1	26.0	30	30	30	30
							2TP04521850	13.5	18.8	28.9	30.0	31.6	32.7	30	30	35	35
							2TP04522450	17.9	24.9	36.5	37.6	39.3	40.4	40	40	40	45
							2TP04523650	25.4	35.3	49.5	50.7	52.3	53.4	50	60	60	60

1. Unit voltage limitations: minimum utilization 342 volts, maximum utilization 457 volts.
2. Maximum HACR breaker of the same amp size is acceptable.

TABLE 9: BLOWER PERFORMANCE 7-1/2 TON STANDARD MOTOR - SIDE DUCT (IMPERIAL)

ESP (iwg)	Turns Open																	
	0			1			2			3			4			5		
	CFM	Watts	BHP	CFM	Watts	BHP	CFM	Watts	BHP	CFM	Watts	BHP	CFM	Watts	BHP	CFM	Watts	BHP
0.2	-	-	-	-	-	-	-	-	-	-	-	-	3580	1340	1.44	3351	1203	1.29
0.4	-	-	-	-	-	-	-	-	-	3436	1368	1.47	3158	1213	1.30	2929	1076	1.15
0.6	-	-	-	-	-	-	3310	1402	1.50	2983	1229	1.32	2705	1073	1.15	2475	936	1.00
0.8	-	-	-	3138	1423	1.53	2762	1232	1.32	2435	1058	1.14	-	-	-	-	-	-
1.0	2858	1414	1.52	2433	1205	1.29	2057	1013	1.09	-	-	-	-	-	-	-	-	-

TABLE 10: BLOWER PERFORMANCE 7-1/2 TON STANDARD MOTOR - SIDE DUCT (METRIC)

ESP (Pa)	Turns Open																	
	0			1			2			3			4			5		
	m ³ /s	In (kW)	Out (kW)	m ³ /s	In (kW)	Out (kW)	m ³ /s	In (kW)	Out (kW)	m ³ /s	In (kW)	Out (kW)	m ³ /s	In (kW)	Out (kW)	m ³ /s	In (kW)	Out (kW)
50	-	-	-	-	-	-	-	-	-	-	-	-	1.69	1.34	1.07	1.58	1.20	0.96
100	-	-	-	-	-	-	-	-	-	1.62	1.37	1.09	1.49	1.21	0.97	1.38	1.08	0.86
149	-	-	-	-	-	-	1.56	1.40	1.12	1.41	1.23	0.98	1.28	1.07	0.86	1.17	0.94	0.75
199	-	-	-	1.48	1.42	1.14	1.30	1.23	0.99	1.15	1.06	0.85	-	-	-	-	-	-
249	1.35	1.41	1.13	1.15	1.20	0.96	0.97	1.01	0.81	-	-	-	-	-	-	-	-	-

TABLE 11: BLOWER PERFORMANCE 7-1/2 TON OPTIONAL MOTOR - SIDE DUCT (IMPERIAL)

ESP (iwg)	Turns Open																	
	0			1			2			3			4			5		
	CFM	Watts	BHP	CFM	Watts	BHP	CFM	Watts	BHP	CFM	Watts	BHP	CFM	Watts	BHP	CFM	Watts	BHP
0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3938	1666	1.79
0.4	-	-	-	-	-	-	-	-	-	-	-	-	3925	1764	1.89	3576	1523	1.63
0.6	-	-	-	-	-	-	-	-	-	3901	1868	2.00	3524	1611	1.73	3176	1370	1.47
0.8	-	-	-	-	-	-	3862	1971	2.11	3457	1697	1.82	3080	1440	1.54	2732	1199	1.29
1.0	-	-	-	3801	2065	2.22	3368	1776	1.90	2963	1502	1.61	2586	1245	1.34	-	-	-
1.2	3712	2145	2.30	3251	1840	1.97	2818	1550	1.66	2413	1276	1.37	-	-	-	-	-	-
1.4	3101	1883	2.02	2640	1577	1.69	-	-	-	-	-	-	-	-	-	-	-	-
1.6	2423	1576	1.69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 12: BLOWER PERFORMANCE 7-1/2 TON OPTIONAL MOTOR - SIDE DUCT (METRIC)

ESP (Pa)	Turns Open																	
	0			1			2			3			4			5		
	m ³ /s	In (kW)	Out (kW)	m ³ /s	In (kW)	Out (kW)	m ³ /s	In (kW)	Out (kW)	m ³ /s	In (kW)	Out (kW)	m ³ /s	In (kW)	Out (kW)	m ³ /s	In (kW)	Out (kW)
50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.86	1.67	1.33
100	-	-	-	-	-	-	-	-	-	-	-	-	1.85	1.76	1.41	1.69	1.52	1.22
149	-	-	-	-	-	-	-	-	-	1.84	1.87	1.49	1.66	1.61	1.29	1.50	1.37	1.10
199	-	-	-	-	-	-	1.82	1.97	1.58	1.63	1.70	1.36	1.45	1.44	1.15	1.29	1.20	0.96
249	-	-	-	1.79	2.07	1.65	1.59	1.78	1.42	1.40	1.50	1.20	1.22	1.24	1.00	-	-	-
299	1.75	2.15	1.72	1.53	1.84	1.47	1.33	1.55	1.24	1.14	1.28	1.02	-	-	-	-	-	-
349	1.46	1.88	1.51	1.25	1.58	1.26	-	-	-	-	-	-	-	-	-	-	-	-
398	1.14	1.58	1.26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 13: BLOWER PERFORMANCE 7-1/2 TON STANDARD MOTOR - DOWNSHOT (IMPERIAL)

ESP (iwg)	Turns Open																	
	0			1			2			3			4			5		
	CFM	Watts	BHP	CFM	Watts	BHP	CFM	Watts	BHP	CFM	Watts	BHP	CFM	Watts	BHP	CFM	Watts	BHP
0.2	-	-	-	3727	1624	1.74	3532	1506	1.62	3325	1372	1.47	3107	1222	1.31	2877	1056	1.13
0.4	3554	1606	1.72	3370	1505	1.61	3175	1387	1.49	2968	1253	1.34	2750	1103	1.18	2521	937	1.01
0.6	3195	1493	1.60	3011	1391	1.49	2816	1273	1.37	2609	1140	1.22	2391	990	1.06	2161	823	0.88
0.8	2806	1372	1.47	2622	1270	1.36	2427	1153	1.24	2220	1019	1.09	-	-	-	-	-	-
1.0	2361	1232	1.32	2178	1131	1.21	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 14: BLOWER PERFORMANCE 7-1/2 TON STANDARD MOTOR - DOWNSHOT (METRIC)

ESP (Pa)	Turns Open																	
	0			1			2			3			4			5		
	m ³ /s	In (kW)	Out (kW)	m ³ /s	In (kW)	Out (kW)	m ³ /s	In (kW)	Out (kW)	m ³ /s	In (kW)	Out (kW)	m ³ /s	In (kW)	Out (kW)	m ³ /s	In (kW)	Out (kW)
50	-	-	-	1.76	1.62	1.30	1.67	1.51	1.20	1.57	1.37	1.10	1.47	1.22	0.98	1.36	1.06	0.84
100	1.68	1.61	1.29	1.59	1.50	1.20	1.50	1.39	1.11	1.40	1.25	1.00	1.30	1.10	0.88	1.19	0.94	0.75
149	1.51	1.49	1.19	1.42	1.39	1.11	1.33	1.27	1.02	1.23	1.14	0.91	1.13	0.99	0.79	1.02	0.82	0.66
199	1.32	1.37	1.10	1.24	1.27	1.02	1.15	1.15	0.92	1.05	1.02	0.82	-	-	-	-	-	-
249	1.11	1.23	0.99	1.03	1.13	0.90	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 15: BLOWER PERFORMANCE 7-1/2 TON OPTIONAL MOTOR - DOWNSHOT (IMPERIAL)

ESP (iwg)	Turns Open																	
	0			1			2			3			4			5		
	CFM	Watts	BHP	CFM	Watts	BHP	CFM	Watts	BHP	CFM	Watts	BHP	CFM	Watts	BHP	CFM	Watts	BHP
0.2	-	-	-	-	-	-	-	-	-	-	-	-	3786	1702	1.83	3476	1489	1.60
0.4	-	-	-	-	-	-	-	-	-	3727	1791	1.92	3409	1570	1.68	3099	1357	1.46
0.6	-	-	-	3994	2117	2.27	3661	1881	2.02	3335	1652	1.77	3018	1431	1.54	2708	1218	1.31
0.8	-	-	-	3590	1969	2.11	3256	1733	1.86	2931	1504	1.61	2613	1283	1.38	2304	1070	1.15
1.0	3516	2053	2.20	3174	1809	1.94	2841	1573	1.69	2515	1344	1.44	2198	1123	1.21	-	-	-
1.2	3091	1880	2.02	2749	1636	1.76	2416	1400	1.50	2090	1171	1.26	-	-	-	-	-	-
1.4	2658	1692	1.82	2316	1448	1.55	-	-	-	-	-	-	-	-	-	-	-	-
1.6	2218	1486	1.59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 16: BLOWER PERFORMANCE 7-1/2 TON OPTIONAL MOTOR - DOWNSHOT (METRIC)

ESP (Pa)	Turns Open																	
	0			1			2			3			4			5		
	m ³ /s	In (kW)	Out (kW)	m ³ /s	In (kW)	Out (kW)	m ³ /s	In (kW)	Out (kW)	m ³ /s	In (kW)	Out (kW)	m ³ /s	In (kW)	Out (kW)	m ³ /s	In (kW)	Out (kW)
50	-	-	-	-	-	-	-	-	-	-	-	-	1.79	1.70	1.36	1.64	1.49	1.19
100	-	-	-	-	-	-	-	-	-	1.76	1.79	1.43	1.61	1.57	1.26	1.46	1.36	1.09
149	-	-	-	1.89	2.12	1.69	1.73	1.88	1.50	1.57	1.65	1.32	1.42	1.43	1.15	1.28	1.22	0.97
199	-	-	-	1.69	1.97	1.58	1.54	1.73	1.39	1.38	1.50	1.20	1.23	1.28	1.03	1.09	1.07	0.86
249	1.66	2.05	1.64	1.50	1.81	1.45	1.34	1.57	1.26	1.19	1.34	1.08	1.04	1.12	0.90	-	-	-
299	1.46	1.88	1.50	1.30	1.64	1.31	1.14	1.40	1.12	0.99	1.17	0.94	-	-	-	-	-	-
349	1.25	1.69	1.35	1.09	1.45	1.16	-	-	-	-	-	-	-	-	-	-	-	-
398	1.05	1.49	1.19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

NOTES FOR TABLES 9 THROUGH 16:

- “Turns Open” refers to the setting of the variable pitch motor sheave, where “0 Turns Open” is fully closed.
- Blower performance includes dry coil and 2" (51mm) throw-away filters.
- Blower performance for gas heat includes the maximum number of heat tubes available for each tonnage.
- ESP (External Static Pressure) given is that available for the supply and return air duct system. All internal resistances have been deducted from the total static pressure of the blower.

TABLE 17: ADDITIONAL STATIC RESISTANCE (IMPERIAL)

CFM	Cooling Only ¹	Economizer ^{2 3}	Electric Heat KW ²				
			9	18	24	36	54
1900	0.06	0.02	0.05	0.06	0.07	0.08	0.10
2100	0.07	0.02	0.06	0.07	0.08	0.09	0.11
2300	0.08	0.02	0.07	0.08	0.09	0.10	0.13
2500	0.09	0.02	0.08	0.09	0.10	0.11	0.14
2700	0.11	0.03	0.09	0.10	0.12	0.13	0.16
2900	0.12	0.03	0.10	0.11	0.13	0.14	0.18
3100	0.14	0.03	0.12	0.13	0.15	0.16	0.20
3300	0.16	0.03	0.13	0.14	0.17	0.18	0.22
3500	0.18	0.04	0.15	0.16	0.19	0.20	0.24
3700	0.20	0.04	0.17	0.18	0.21	0.22	0.26
3900	0.23	0.04	0.19	0.20	0.23	0.24	0.28
4100	0.25	0.04	0.21	0.22	0.25	0.26	0.31
4300	0.28	0.05	0.23	0.24	0.28	0.29	0.34
4500	0.30	0.05	0.25	0.26	0.30	0.31	0.37
4700	0.33	0.05	0.28	0.29	0.33	0.34	0.40
4900	0.36	0.05	0.30	0.31	0.35	0.37	0.43
5100	0.39	0.06	0.33	0.34	0.38	0.40	0.46
5300	0.42	0.06	0.35	0.37	0.41	0.43	0.49
5500	0.45	0.06	0.38	0.40	0.44	0.46	0.53
5700	0.48	0.06	0.41	0.43	0.47	0.49	0.56
5900	0.52	0.07	0.44	0.46	0.50	0.53	0.59
6100	0.56	0.07	0.47	0.49	0.53	0.56	0.62
6300	0.60	0.07	0.50	0.53	0.56	0.59	0.65

1. Add these resistance values to the available static resistance in the respective Blower Performance Tables.
2. Deduct these resistance values from the available external static pressure shown in the respective Blower Performance Table.
3. The pressure drop through the economizer is greater for 100% outdoor air than for 100% return air. If the resistance of the return air duct system is less than 0.25 IWG, the unit will deliver less CFM during full economizer operation.

TABLE 18: ADDITIONAL STATIC RESISTANCE (METRIC)

m ³ /s	Cooling Only ¹	Economizer ^{2 3}	Electric Heat kW ²				
			9	18	24	36	54
0.89	14.9	5.0	12.4	14.9	17.4	19.9	24.8
0.99	17.4	5.0	14.9	17.4	19.9	22.4	27.3
1.08	19.9	5.0	17.4	19.9	22.4	24.8	32.3
1.18	22.4	5.0	19.9	22.4	24.8	27.3	34.8
1.27	27.3	7.5	22.4	24.8	29.8	32.3	39.7
1.36	29.8	7.5	24.8	27.3	32.3	34.8	44.7
1.46	34.8	7.5	29.8	32.3	37.3	39.7	49.7
1.55	39.7	7.5	32.3	34.8	42.2	44.7	54.6
1.65	44.7	9.9	37.3	39.7	47.2	49.7	59.6
1.74	49.7	9.9	42.2	44.7	52.2	49.7	64.6
1.83	57.1	9.9	47.2	49.7	57.1	59.6	69.5
1.93	62.1	9.9	52.2	54.6	62.1	64.6	77.0
1.02	69.5	12.4	57.1	59.6	69.5	72.0	84.4
2.12	74.5	12.4	62.1	64.6	74.5	77.0	91.9
2.21	82.0	12.4	69.5	72.0	82.0	84.4	99.3
2.30	89.4	12.4	74.5	77.0	86.9	91.9	106.8
2.40	96.9	14.9	82.0	84.4	94.4	99.3	114.2
2.49	104.3	14.9	86.9	91.9	101.8	106.8	121.7
2.59	111.8	14.9	94.4	99.3	109.3	114.2	131.6
2.68	119.2	14.9	101.8	106.8	116.7	121.7	139.1
2.77	129.1	17.4	109.3	114.2	124.2	131.6	146.5
2.87	139.1	17.4	116.7	121.7	131.6	139.1	154.0
2.96	149.0	17.4	124.2	131.6	139.1	146.5	161.4

1. Add these resistance values to the available static resistance in the respective Blower Performance Tables.
2. Deduct these resistance values from the available external static pressure shown in the respective Blower Performance Table.
3. The pressure drop through the economizer is greater for 100% outdoor air than for 100% return air. If the resistance of the return air duct system is less than 62.1 Pa, the unit will deliver less m³/s during full economizer operation.

**TABLE 19: ELECTRIC HEAT MINIMUM SUPPLY AIR
- IMPERIAL**

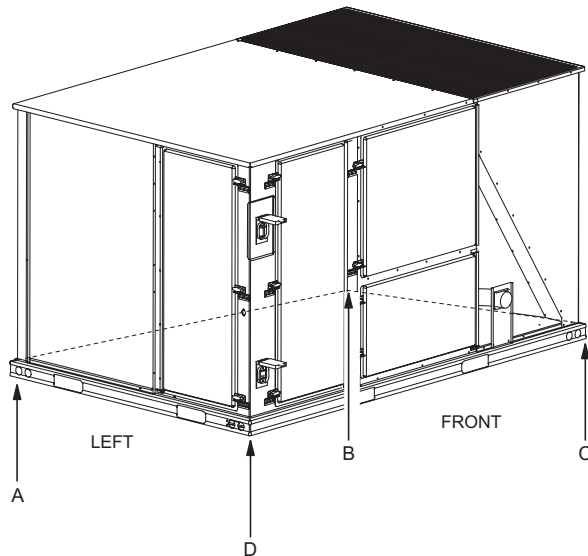
HEATER		UNIT MODEL SIZE, NOMINAL TONS	
kW	VOLTAGE	7.5	
		MINIMUM SUPPLY AIR CFM	
9	380/415	2250	
18		2250	
24		2250	
36		2250	

**TABLE 20: ELECTRIC HEAT MINIMUM SUPPLY AIR
- METRIC**

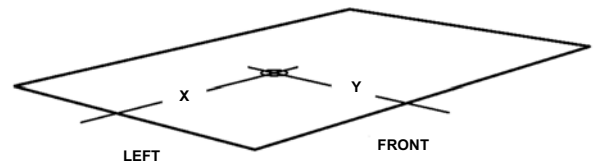
HEATER		UNIT MODEL SIZE, NOMINAL TONS	
kW	VOLTAGE	7.5	
		MINIMUM SUPPLY AIR m³/s	
9	380/415	1.06	
18		1.06	
24		1.06	
36		1.06	

TABLE 21: INDOOR BLOWER SPECIFICATIONS

MODEL	MOTOR					MOTOR SHEAVE			BLOWER SHEAVE			BELT
	HP	RPM	Eff.	SF	Frame	Datum Dia. (in.)	Bore (in.)	Model	Datum Dia. (in.)	Bore (in.)	Model	
DR090	1-1/2	1725	80%	1.15	56	3.4 - 4.4	7/8	1VM50	7.5	1	AK79	A55
	2	1725	80%	1.15	56	3.4 - 4.4	7/8	1VM50	6.5	1	AK69	A53

**FIGURE 8 - UNIT 4 POINT LOAD****TABLE 22: 4 POINT LOAD WEIGHT**

Model	Location (lbs. (kg.))			
	A	B	C	D
090	250 (113.4)	215 (97.5)	309 (140.2)	374 (169.6)



Unit Model Number	X	Y
DR090	41 (1041)	24 (610)

FIGURE 9 - UNIT CENTER OF GRAVITY

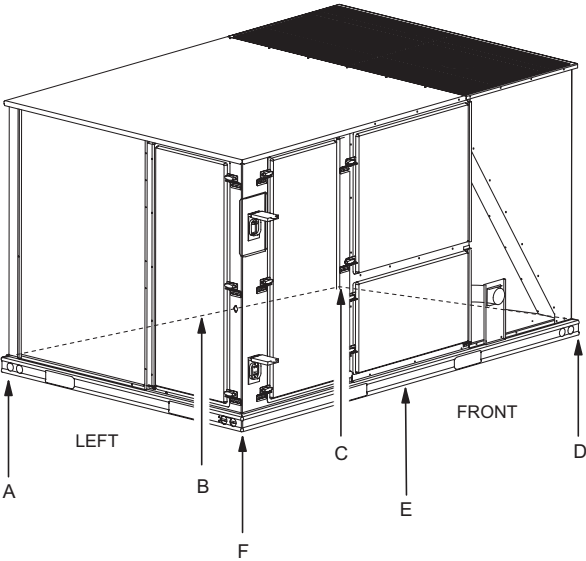


FIGURE 10 - UNIT 6 POINT LOAD

TABLE 23: 6 POINT LOAD WEIGHT

Model	Locations (lbs. (kg.))					
	A	B	C	D	E	F
090	171 (77.6)	154 (69.9)	139 (63.0)	201 (91.2)	225 (102.0)	258 (117.0)

TABLE 24: UNIT WEIGHT

Model	Shipping Weight lbs. (kg)	Operating Weight lbs. (kg)
090	1163 (527.5)	1148 (520.7)

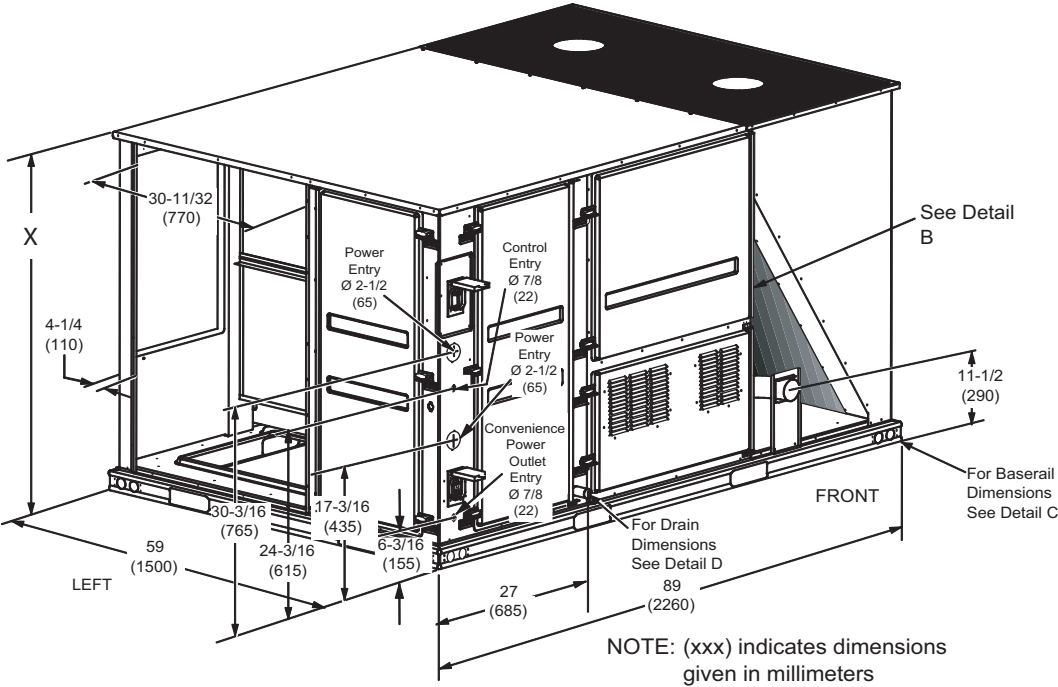
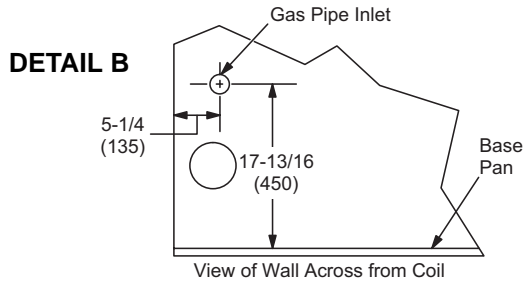
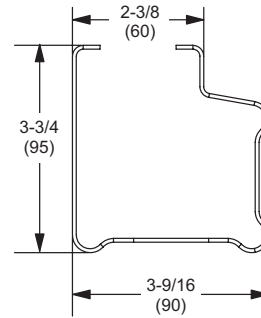


FIGURE 11 - UNIT DIMENSIONS

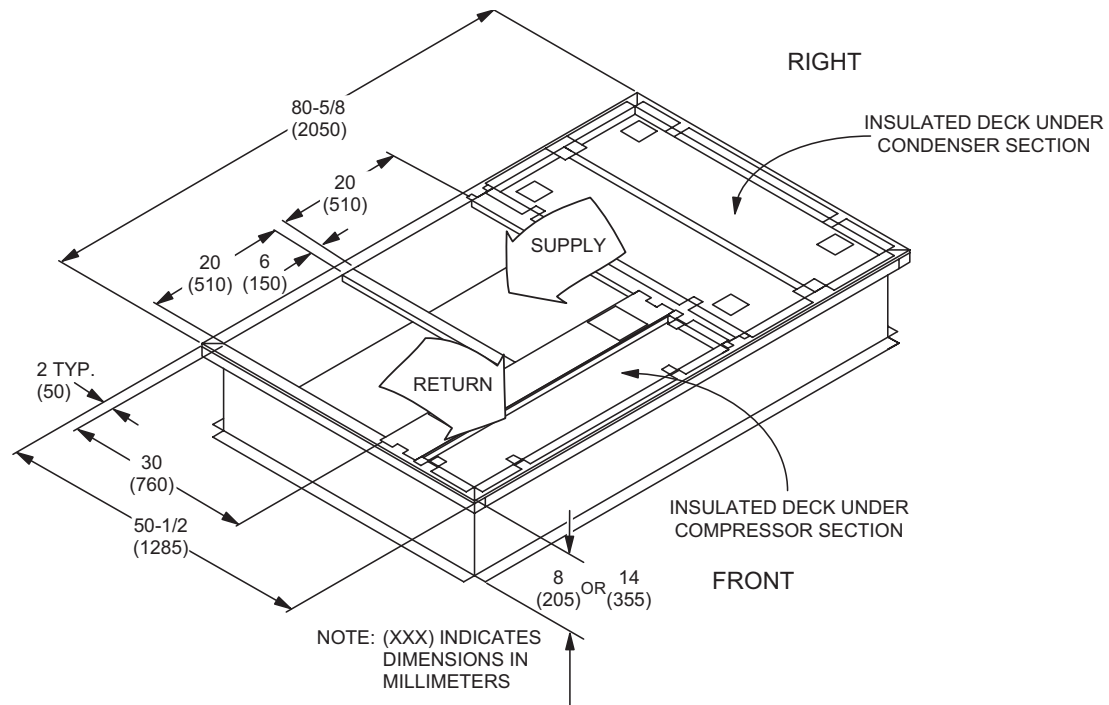
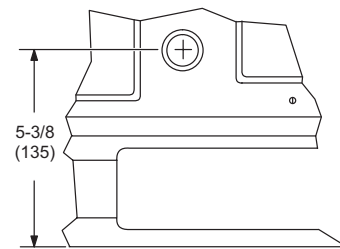
TABLE 25: UNIT HEIGHT

Unit Model Number	X
DR090	50 3/4 (1289)

**DETAIL C****TABLE 26: UNIT CLEARANCES ¹**

Top²	72(1830)	Right	12(305)
Front	36(915)	Left	36(915)
Rear³	36(915)	Bottom⁴	0(0)

1. In inches and millimeters, in.(mm).
2. Units must be installed outdoors. Overhanging structure or shrubs should not obstruct condenser air discharge outlet.
3. To remove the slide-out drain pan, a rear clearance of 60" (1525 mm) is required. If space is unavailable, the drain pan can be removed through the front by separating the corner wall.
4. Units may be installed on combustible floors.

DETAIL D**FIGURE 12 - PREDATOR® ROOF CURB DIMENSIONS**

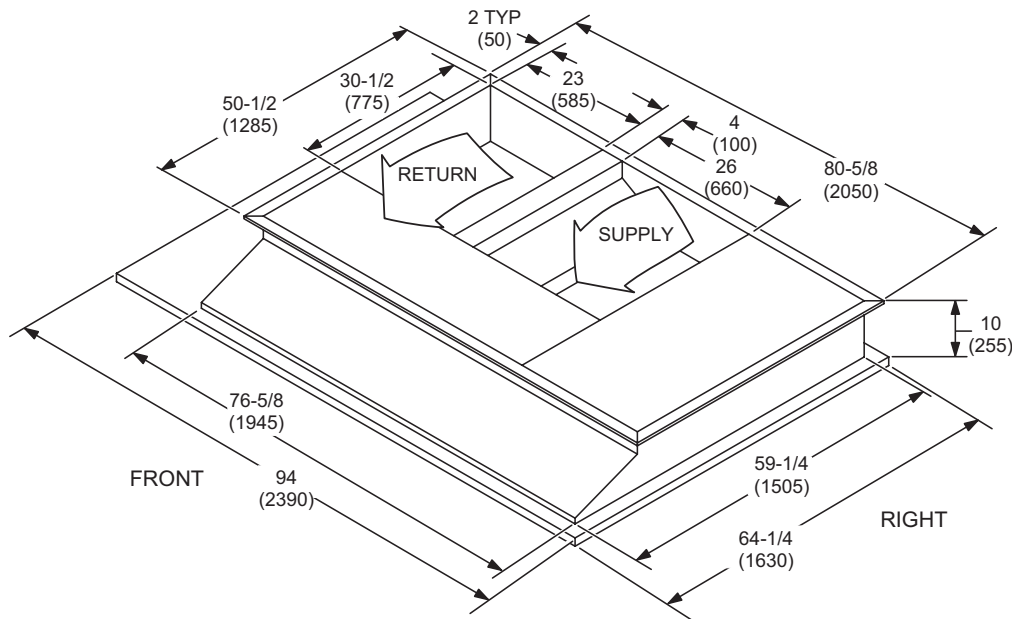


FIGURE 13 - SUNLINE™ TO PREDATOR® TRANSITION ROOF CURB

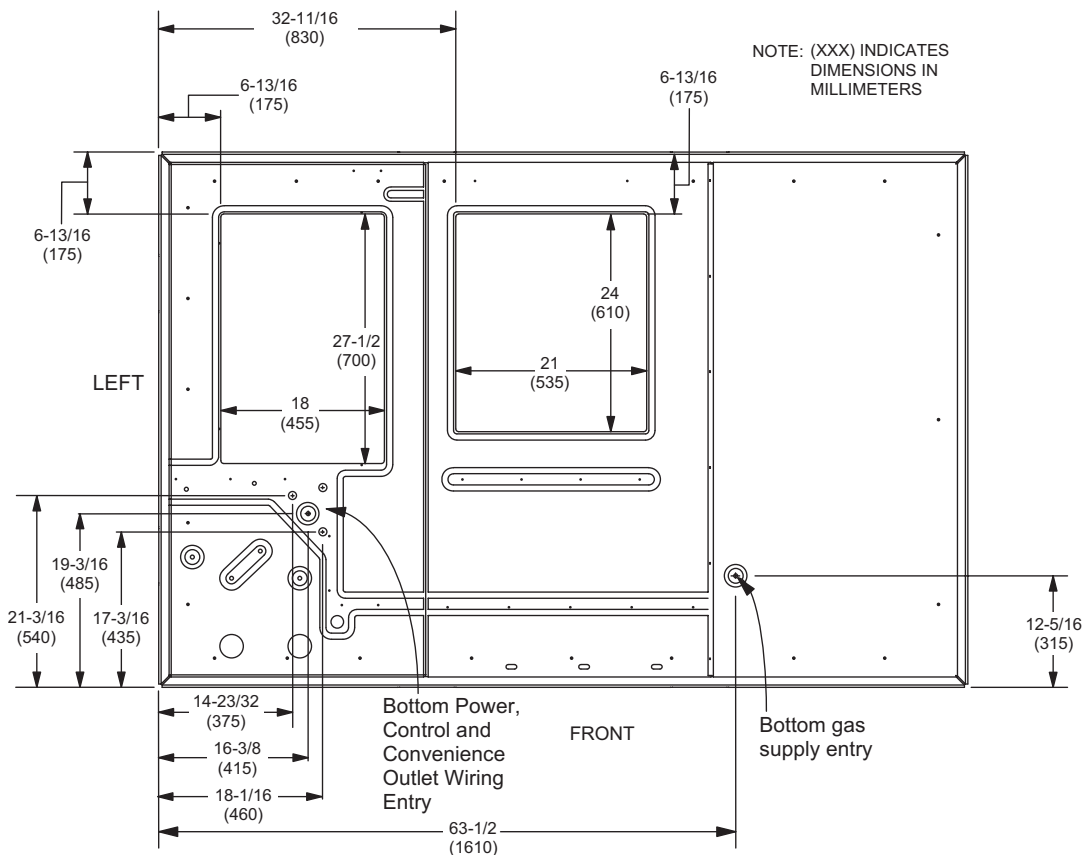


FIGURE 14 - BOTTOM DUCT OPENINGS (FROM ABOVE)

REAR DUCT DIMENSIONS

MODEL	DIMENSION		
	"A"	"B"	"C"
DR090	28 1/4 (717)	18 1/16 (459)	28 1/4 (717)

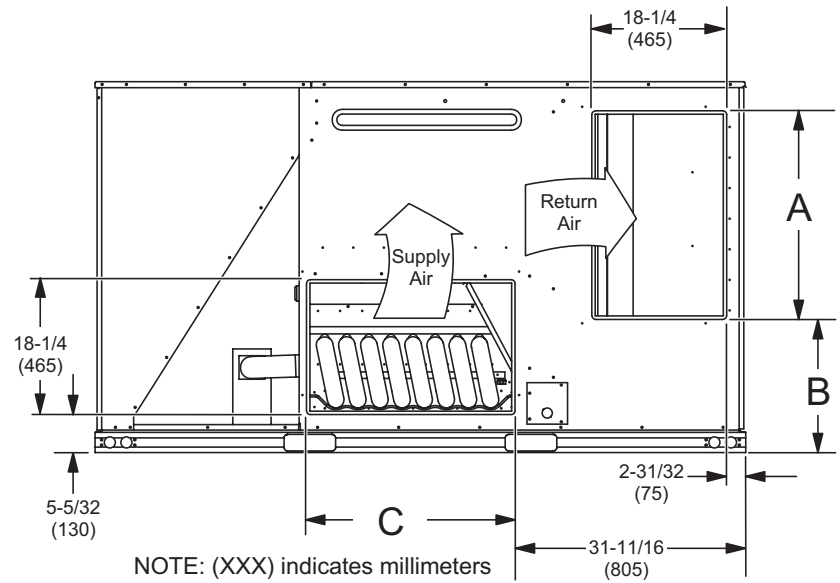
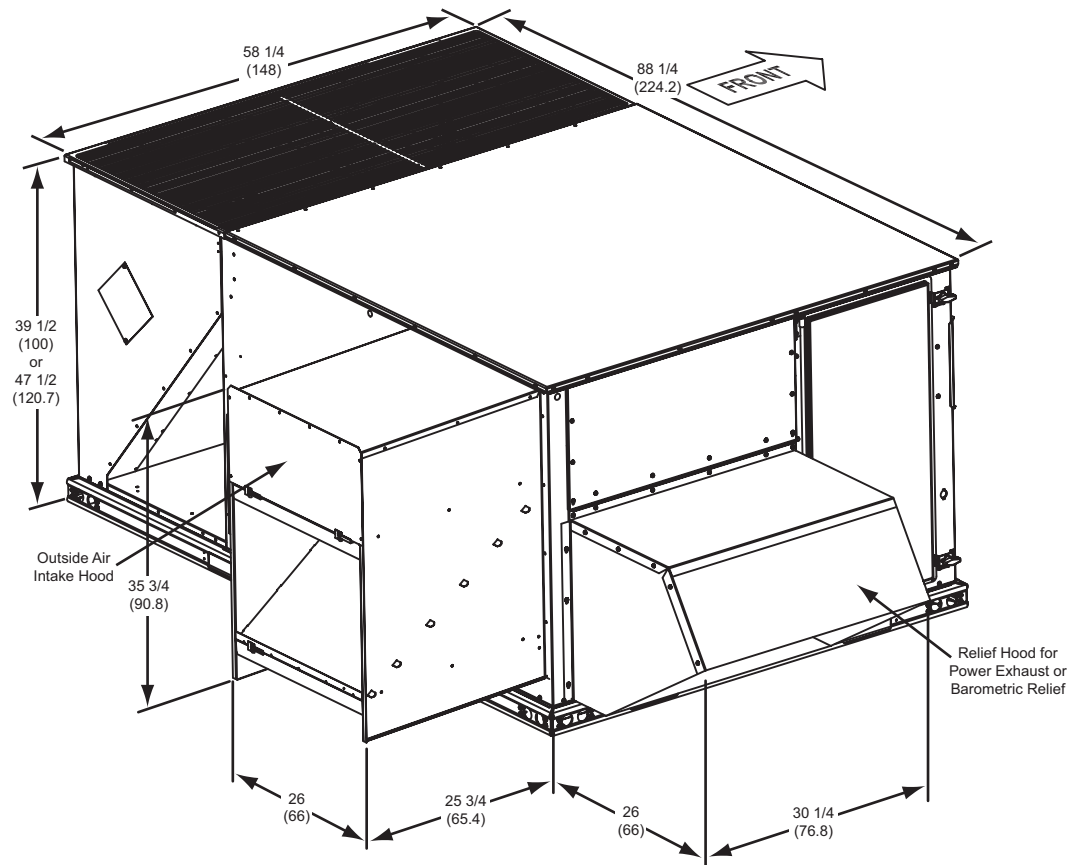
**FIGURE 15 - REAR DUCT DIMENSIONS****FIGURE 16 - DOWNFLOW ECONOMIZER HOOD DETAIL**

TABLE 27: ECONOMIZER USAGE

Application	Description	Model
Bottom Return	Downflow economizer with barometric relief	2EE04705424
Side Return	Horizontal economizer without barometric relief	2EE04705524 ¹
ERV or End Return	Slab Economizer, 50" tall cabinet	2EE04705224 ²

- 1. Barometric relief must be ordered separately and installed in duct work.
- 2. Barometric relief or fresh air hood not included. Must be ordered separately.

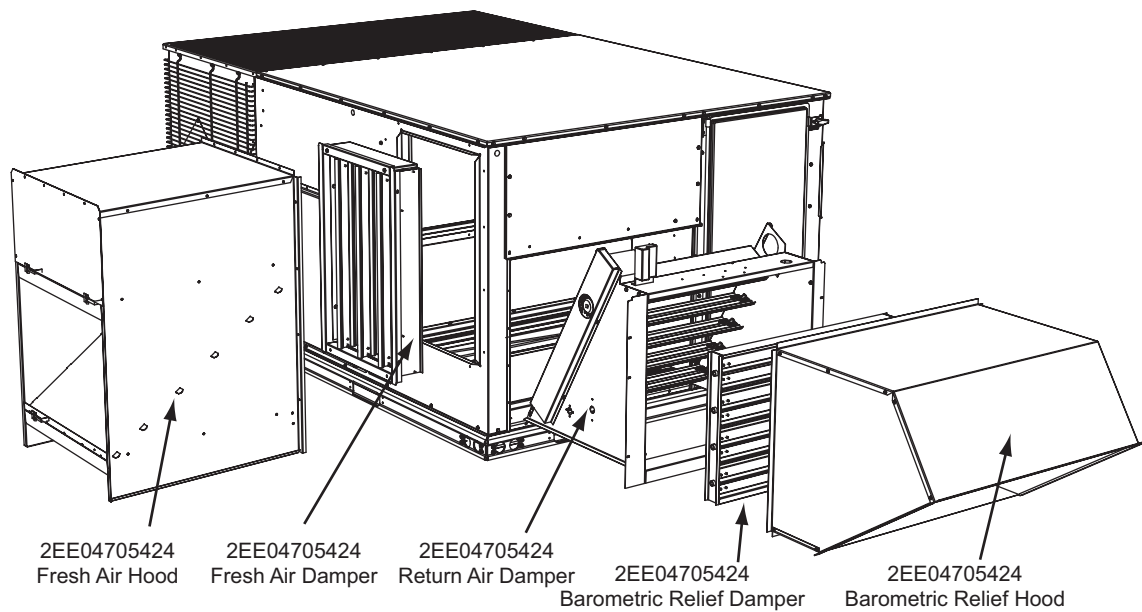


FIGURE 17 - FACTORY INSTALLED DOWNFLOW ECONOMIZER

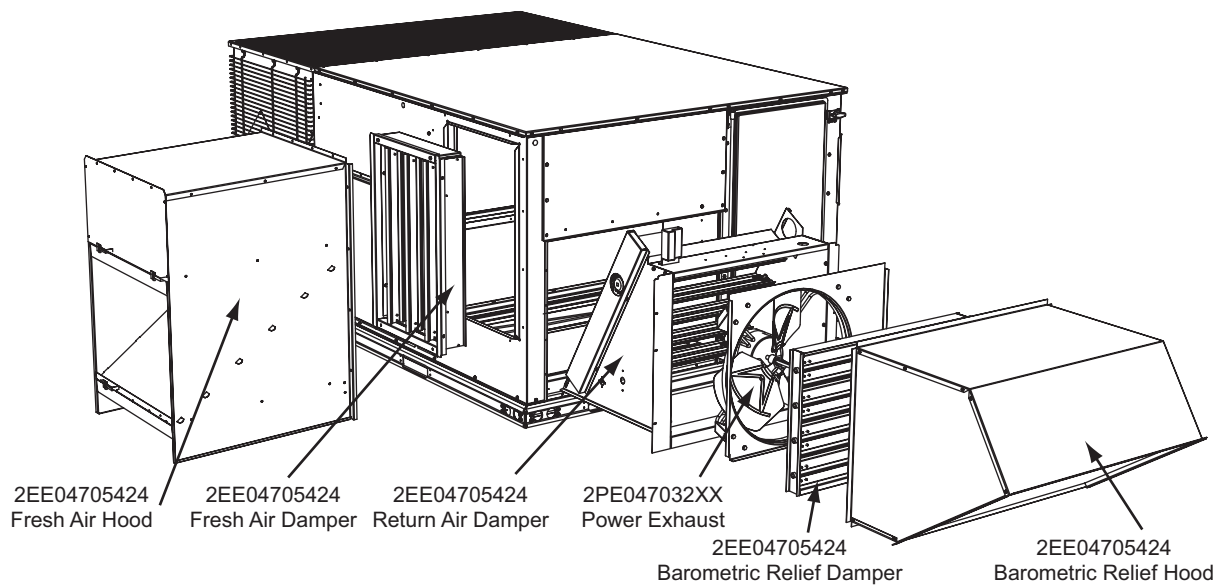


FIGURE 18 - FIELD INSTALLED DOWNFLOW ECONOMIZER W/POWER EXHAUST

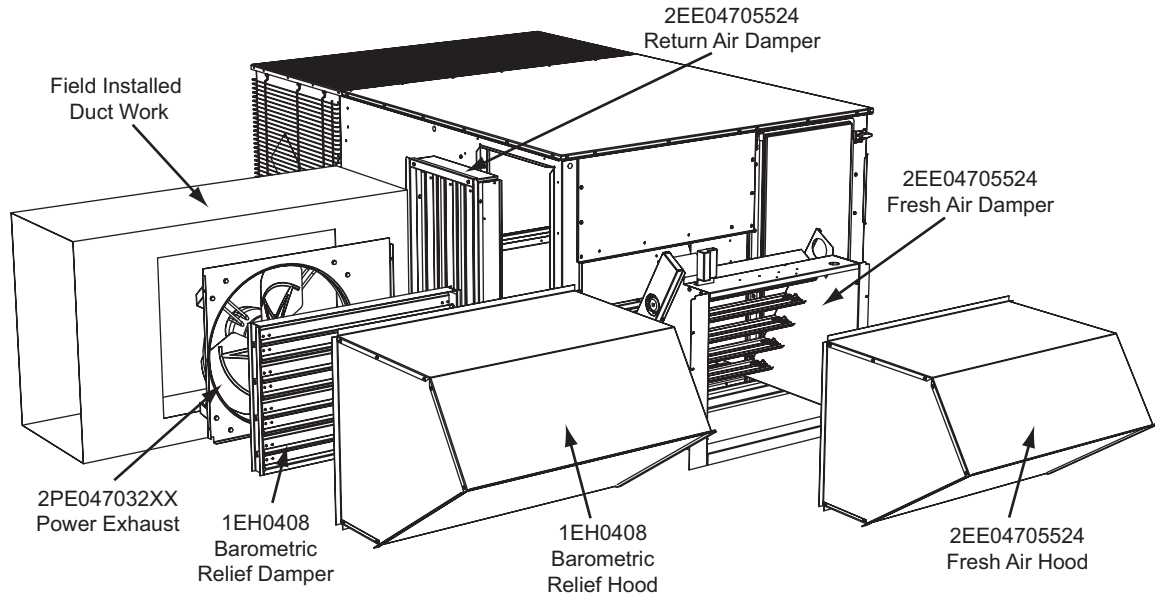


FIGURE 19 - FIELD INSTALLED HORIZONTAL ECONOMIZER W/POWER EXHAUST

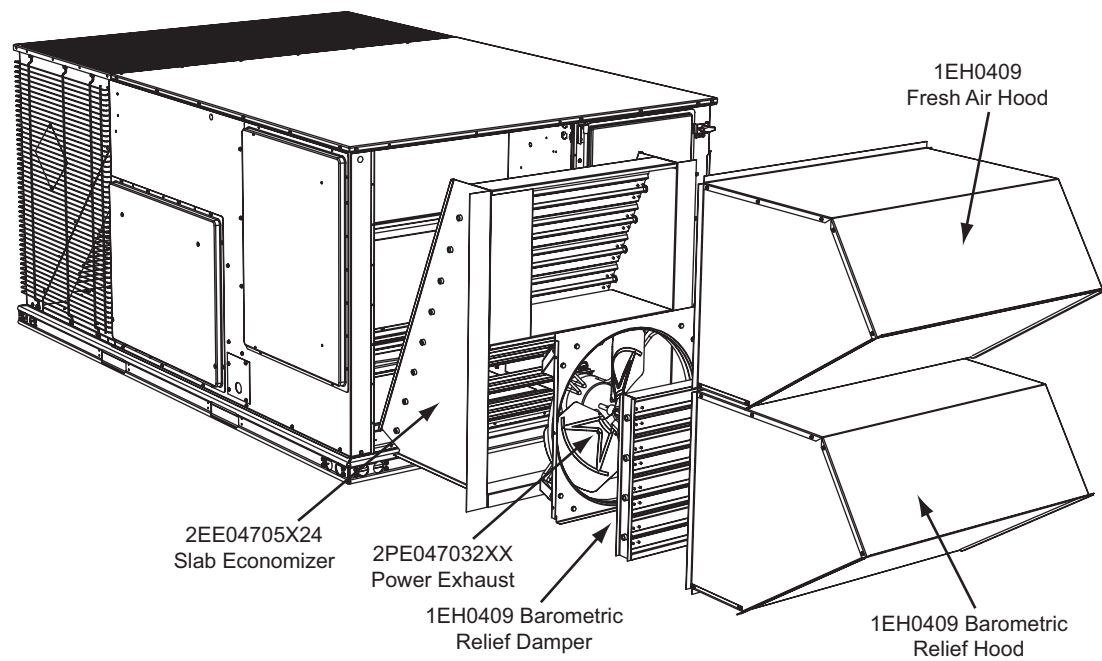


FIGURE 20 - SLAB ECONOMIZER DOWNFLOW W/POWER EXHAUST

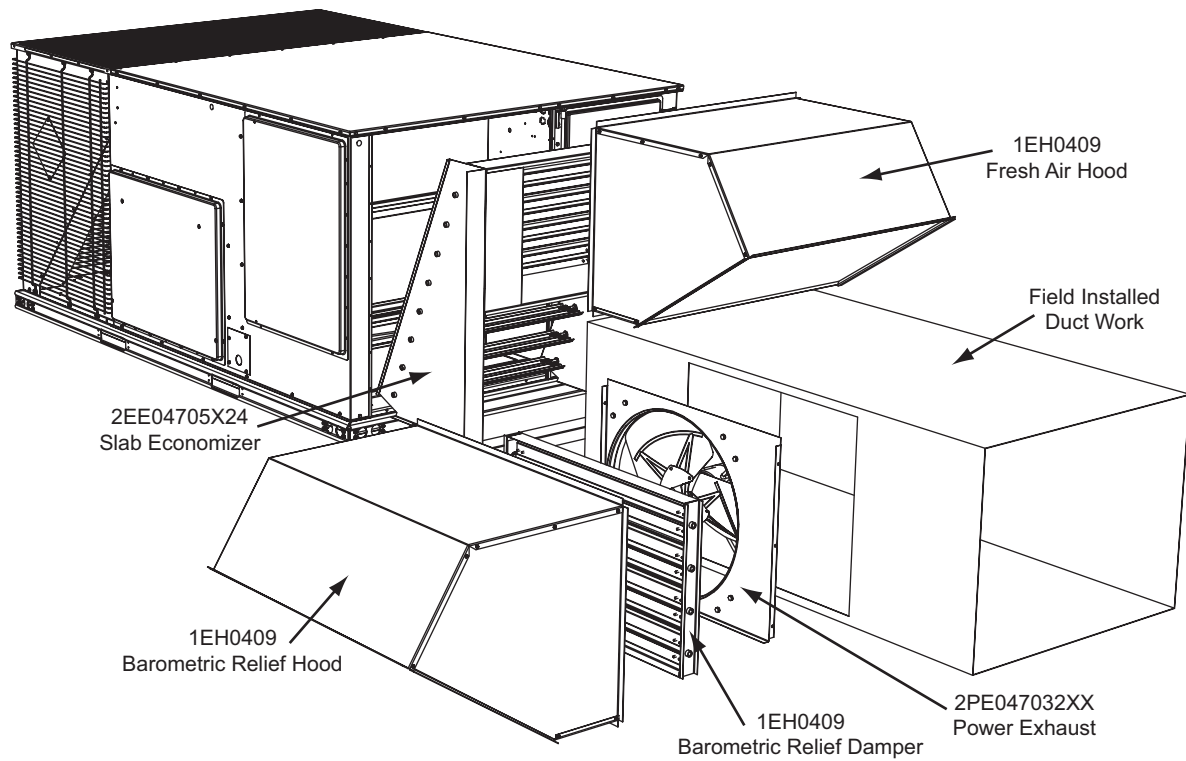
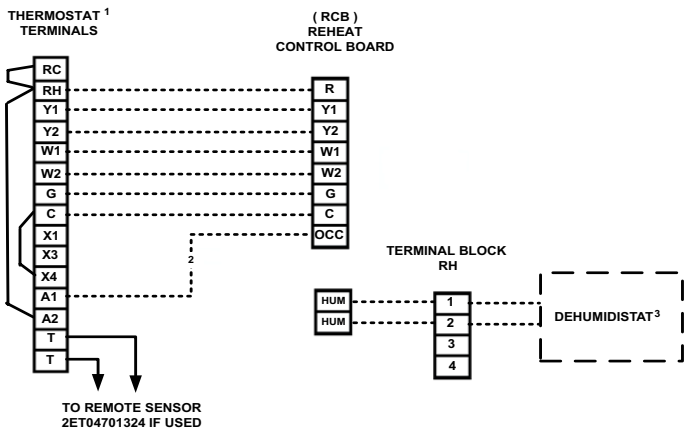
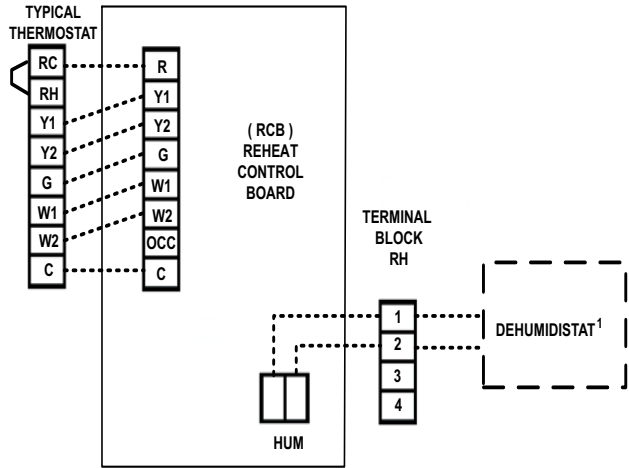


FIGURE 21 - SLAB ECONOMIZER END RETURN W/POWER EXHAUST



¹ Electronic programmable Thermostat 2ET0770010024 (includes subbase).
² Terminals A1 and A2 provide a relay output to close the outdoor economizer dampers when the thermostat switches to the set-back position.
³ Dehumidistat closes on rise in humidity.



¹Dehumidistat closes on rise in humidity.

FIGURE 22 - TYPICAL LOW VOLTAGE FIELD WIRING

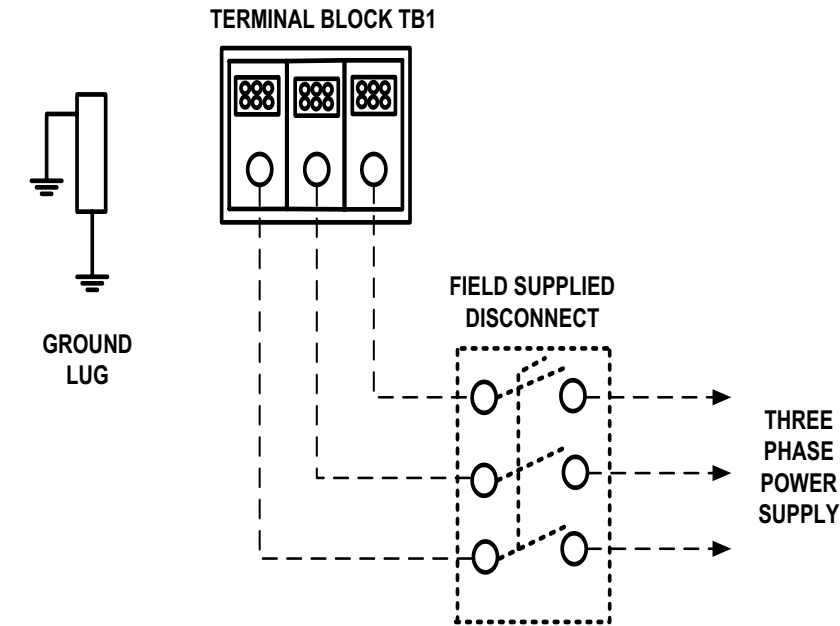


FIGURE 23 - FIELD WIRING DISCONNECT - COOLING UNIT WITH OR WITHOUT ELECTRIC HEAT

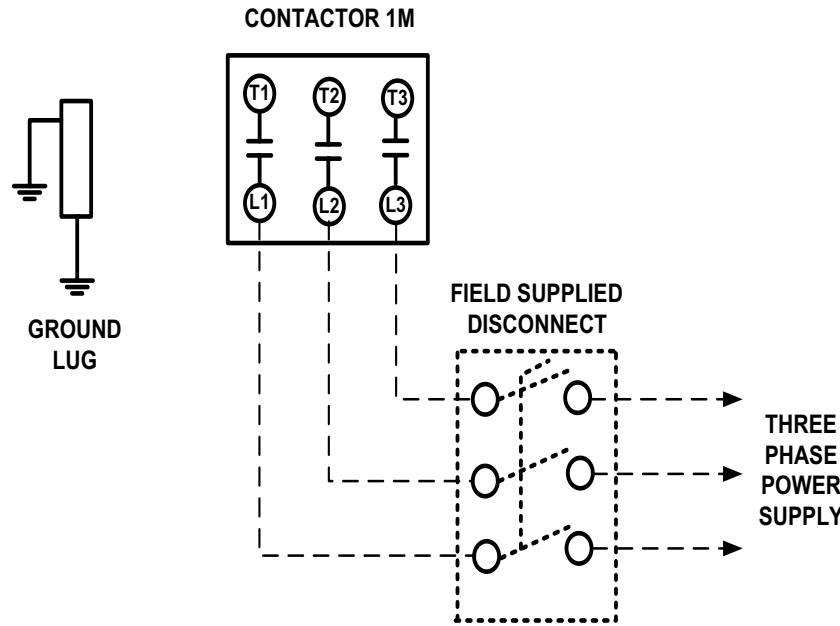
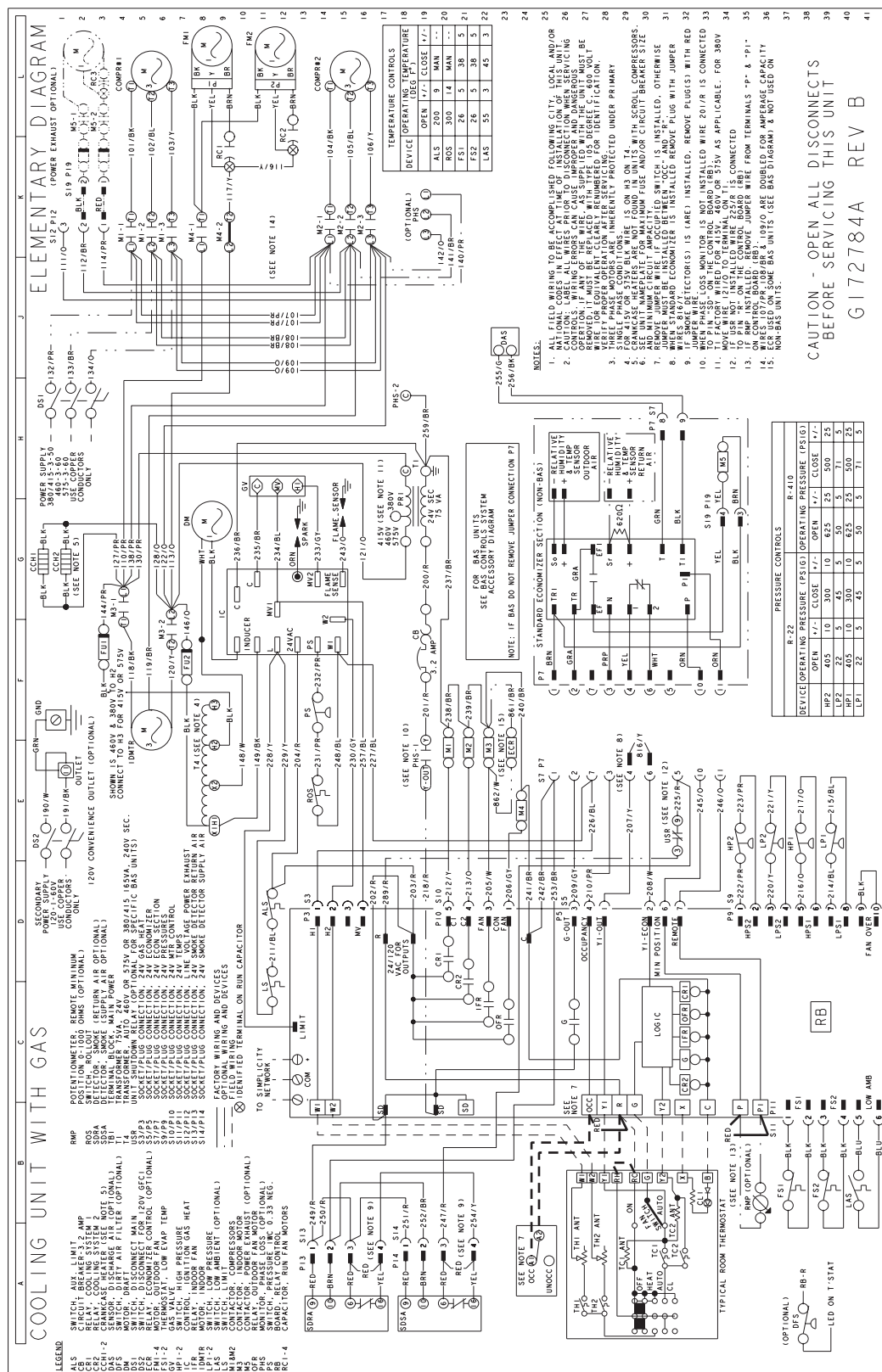


FIGURE 24 - FIELD WIRING DISCONNECT - COOLING UNIT WITH GAS HEAT

FIGURE 25 - TYPICAL DR090 COOLING UNIT WITH GAS HEAT WIRING DIAGRAM



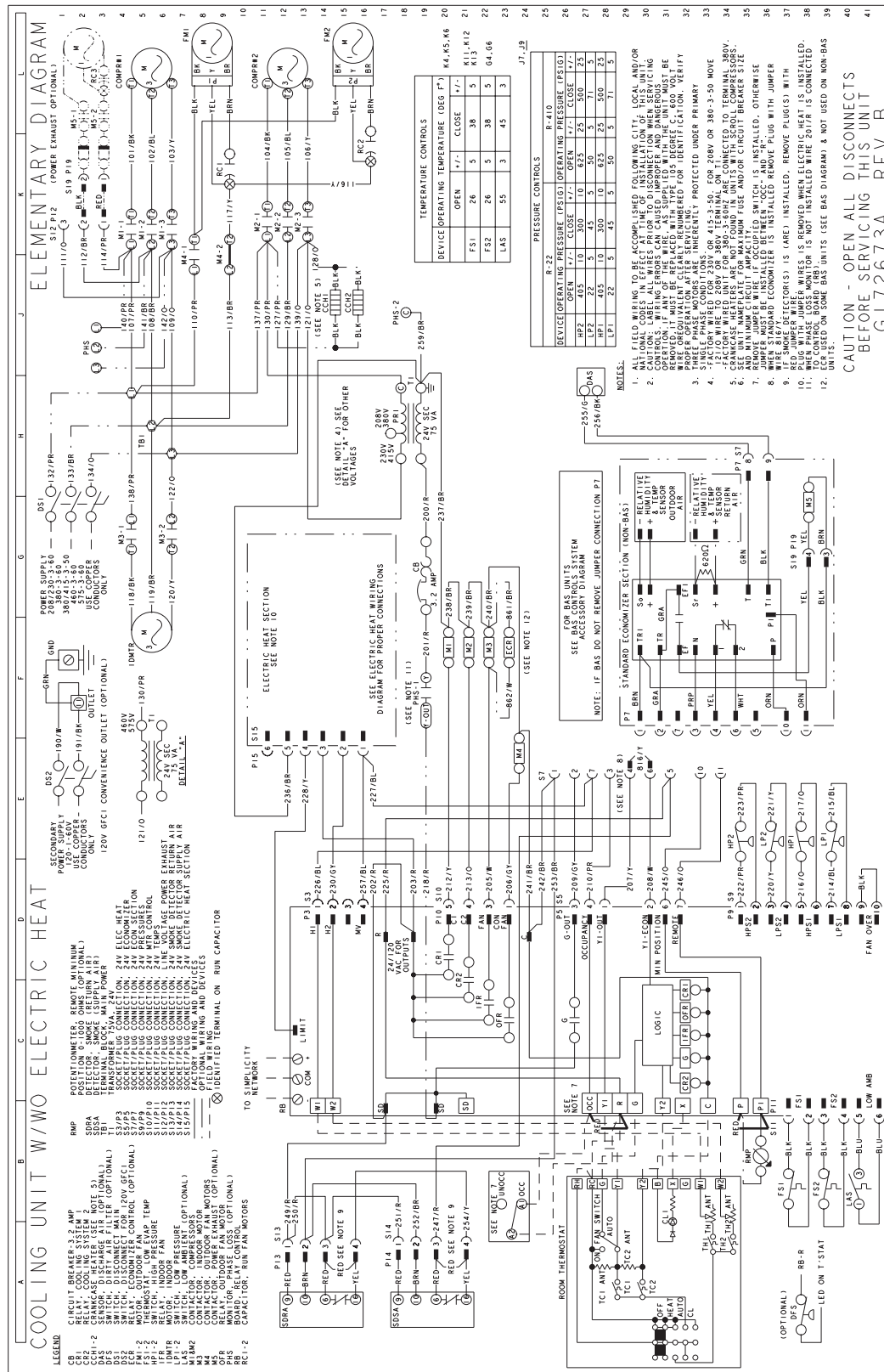
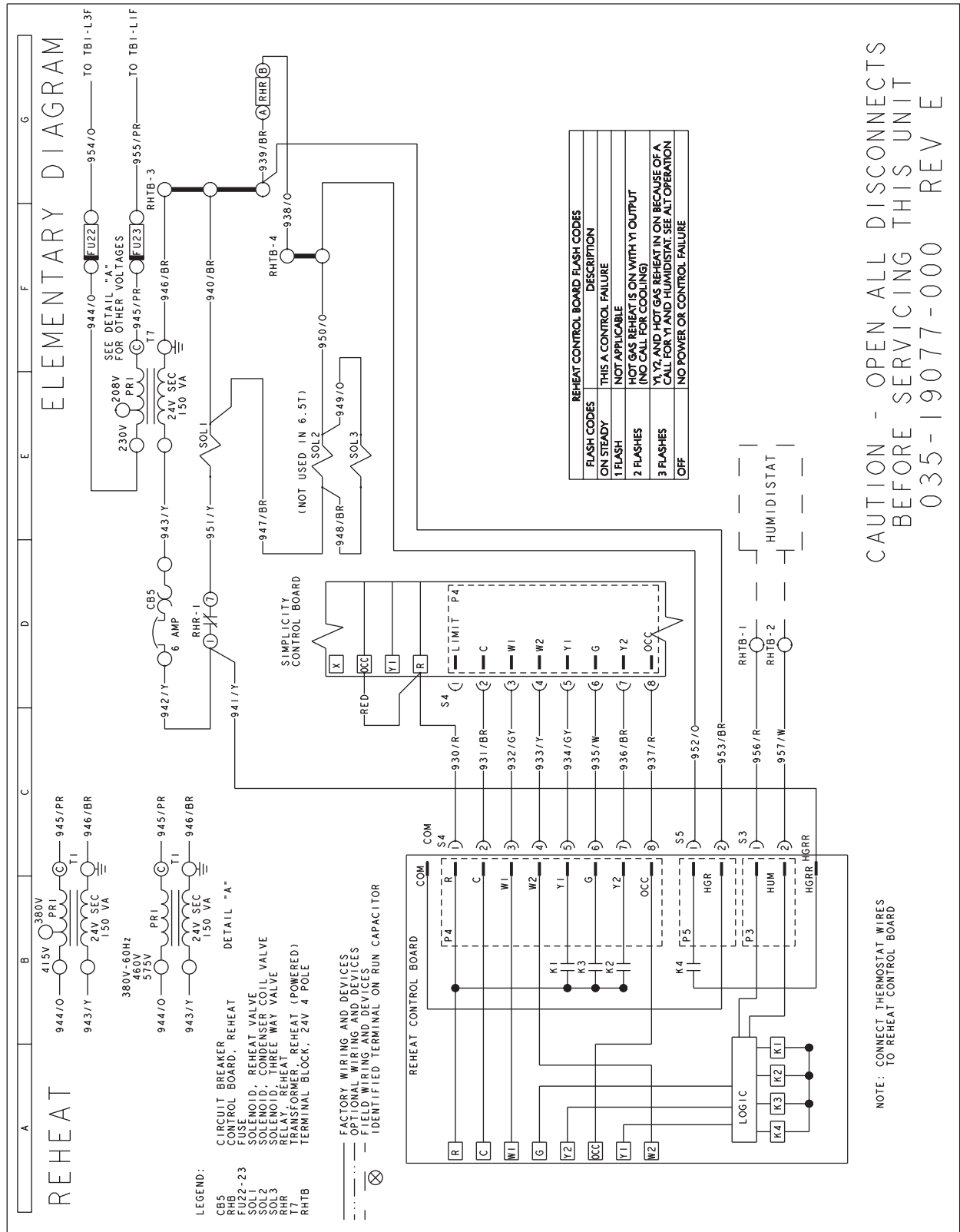


FIGURE 26 - TYPICAL DR090 COOLING UNIT WITH/WITHOUT ELECTRIC HEAT WIRING DIAGRAM



GUIDE SPECIFICATIONS

PREDATOR® MagnaDRY™ DR 090

GENERAL

Units shall be manufactured by Unitary Products in an ISO 9001 certified facility. YORK® Predator® MagnaDRY™ units are convertible single packages with a common footprint cabinet and common roof curb. All units have two compressors with independent refrigeration circuits to provide 2 stages of cooling. The units were designed for light commercial applications and can be easily installed on a roof curb, slab, or frame. All Predator® MagnaDRY™ units are self-contained and assembled on rigid full perimeter base rails allowing for 3-way forklift access and overhead rigging. Every unit is completely charged, wired, piped, and tested at the factory to provide a quick and easy field installation. All units are convertible between side and down airflow. Independent economizer designs are used on side and down discharge applications, as well as all tonnage sizes. Predator® MagnaDRY™ units are available in the following configurations: cooling only, cooling with electric heat, and cooling with gas heat. Electric heaters are available as factory-installed options or field-installed accessories.

DESCRIPTION

Units shall be factory assembled, single package, (Elec/Elec, Gas/Elec), designed for outdoor installation. Units shall have a minimum EER of 10.5 (3.08 CoP). They shall have built in field convertible duct connections for down discharge supply/return or horizontal discharge supply/return and be available with factory installed options or field installed accessories. The units shall be factory wired, piped and charged with R-22 refrigerant and factory tested prior to shipment. All unit wiring shall be both numbered and color coded. The cooling performance shall be rated in accordance with DOE and ARI test procedures. Units shall be CSA certified to ANSI Z21.47 and UL 1995/CAN/CSA No. 236-M90 standards.

UNIT CABINET

Unit cabinet shall be constructed of galvanized steel with exterior surfaces coated with a non-chalking, powder paint finish, certified at 1000 hours salt spray test per ASTM-B117 standards. Indoor blower sections shall be insulated with up to 1/2" (1.27 cm) thick insulation coated on the airside. Aluminum foil faced insulation shall be used in the unit's compartments and be fastened to prevent insulation from entering the air stream. Cabinet doors shall be hinged with tool-less access for easy servicing and maintenance. Full perimeter base rails shall be provided to assure reliable transit of equipment, overhead rigging, fork truck access and proper sealing on roof curb applications. Disposable 2" filters shall be furnished and be accessible through hinged access door. Fan performance measuring ports shall be provided on the outside of the cabinet to allow accurate air measurements of

evaporator fan performance without removing panels or creating bypass of the coils. Condensate pan shall be slide out design, constructed of a non corrosive material, internally sloped and conforming to ASHRAE 62-B9 standards. Condensate connection shall be a minimum of 3/4" I.D. female and be rigid mount connection.

INDOOR (EVAPORATOR) FAN ASSEMBLY

Fan shall be a belt drive assembly and include an adjustable pitch motor pulley. Job site selected brake horsepower shall not exceed the motors nameplate horsepower rating plus the service factor. Units shall be designed to operate within the service factor. Fan wheel shall be double inlet type with forward curve blades, dynamically balanced to operate smoothly throughout the entire range of operation. Airflow design shall be constant volume. Bearings shall be sealed and permanently lubricated for longer life and no maintenance. Entire blower assembly and motor shall be slide out design.

OUTDOOR (CONDENSER) FAN ASSEMBLY

The outdoor fans shall be of the direct drive type, discharge air vertically, have aluminum blades riveted to corrosion resistant steel spider brackets and shall be dynamically balanced for smooth operation. The outdoor fan motors shall have permanently lubricated bearings internally protected against overload conditions and staged independently. A cleaning window shall be provided on two sides of the units for coil cleaning.

REFRIGERANT COMPONENTS

Compressors:

- A. Shall be fully hermetic type, direct drive, internally protected with internal high-pressure relief and over temperature protection. The hermetic motor shall be suction gas cooled and have a voltage range of + or – 10% of the unit nameplate voltage.
- B. Shall have internal spring isolation and sound muffling to minimize vibration and noise, and be externally isolated on a dedicated, independent mounting.

Coils:

- A. Evaporator and condenser coils shall have aluminum plate fins mechanically bonded to seamless internally enhanced copper tubes with all joints brazed. Special Phenolic coating shall be available as a factory option.
- B. Evaporator and condenser coils shall be of the direct expansion, draw-thru design.

Refrigerant Circuit and Refrigerant Safety Components shall include:

- A. Independent fixed-orifice or thermally operated expansion devices.
- B. Solid core filter drier/strainer to eliminate any moisture or foreign matter.
- C. Accessible service gage connections on both suction and discharge lines to charge, evacuate, and measure refrigerant pressure during any necessary servicing or troubleshooting, without losing charge.
- D. The unit shall have two independent refrigerant circuits, equally split in 50% capacity increments.

Unit Controls:

- A. Unit shall be complete with self-contained low-voltage control circuit protected by a resettable circuit breaker on the 24-volt transformer side.
- B. Unit shall incorporate a lockout circuit which provides reset capability at the space thermostat or base unit should any of the following standard safety devices trip and shut off compressor:
 - (1) High-pressure switch.
 - (2) Freeze-protection thermostat, evaporator coil. If any of the above safety devices trip, an LED (light-emitting diode) indicator shall flash a diagnostic code that indicates which safety switch has tripped.
- D. Unit shall incorporate "AUTO RESET" compressor over temperature, over current protection.
- E. Unit shall operate with conventional thermostat designs and have a low voltage terminal strip for easy hook-up.
- F. Unit control board shall have on-board diagnostics and fault code display.
- G. Standard controls shall include anti-short cycle and low voltage protection, and permit cooling operation down to 0 °F/-17.8°C.
- H. Control board shall monitor each refrigerant safety switch independently.
- I. Control board shall retain last 5 fault codes in non-volatile memory, which will not be lost in the event of a power loss.

GAS HEATING SECTION (IF EQUIPPED)

Heat exchanger and exhaust system shall be constructed of aluminized steel and shall be designed with induced draft combustion with post purge logic, energy saving direct spark ignition, and redundant main gas valve. The heat exchanger shall be of the tubular type, constructed of T1-40 aluminized steel for corrosion resistance and allowing minimum mixed

air entering temperature of 40 °F/4.4°C. Burners shall be of the in-shot type, constructed of aluminum-coated steel. All gas piping shall enter the unit cabinet at a single location, through either the side or bottom, without any field modifications. An integrated control board shall provide timed control of evaporator fan functioning and burner ignition. Heating section shall be provided with the following minimum protection:

- A. Primary and auxiliary high-temperature limit switches.
- B. Induced draft pressure sensor.
- C. Flame roll out switch (manual reset).
- D. Flame proving controls.

NOTE: Unit shall have two independent stages of capacity (60% 1st stage, 100% 2nd stage).

ELECTRIC HEATING SECTION (IF EQUIPPED)

An electric heating section, with nickel chromium elements, shall be provided in a range of 9 thru 54 KW, offering two states of capacity all sizes. The heating section shall have a primary limit control(s) (automatic reset) to prevent the heating element system from operating at an excessive temperature. The Heating Section assembly shall slide out of the unit for easy maintenance and service. Units with Electric Heating Sections shall be wired for a single point power supply with branch circuit fusing (where required).

UNIT OPERATING CHARACTERISTICS

Unit shall be capable of starting and running at 125 °F/52°C outdoor temperature, exceeding maximum load criteria of ARI Standard 340/360. The compressor, with standard controls, shall be capable of operation down to 0 °F/-17.8°C outdoor temperature. Unit shall be provided with fan time delay to prevent cold air delivery before heat exchanger warms up. (Gas heat only)

ELECTRICAL REQUIREMENTS - All unit power wiring shall enter unit cabinet at a single factory provided location and be capable of side or bottom entry to minimize roof penetrations and avoid unit field modifications. Separate side and bottom openings shall be provided for the control wiring.

STANDARD LIMITED WARRANTIES - Compressor – 5 Years, Heat Exchanger – 10 Years, Elect. Heat Elem. – 5 Years, Parts – 1 Year

FACTORY INSTALLED OPTIONAL OUTDOOR AIR (Shall be made available by either/or):

1. **ELECTRONIC ENTHALPY AUTOMATIC ECONOMIZER** – Outdoor and return air dampers that are interlocked and positioned by a fully-modulating, spring-return damper actuator. The maximum leakage rate for the outdoor air intake dampers shall not exceed 2% when dampers are fully closed and operating against a pressure differential of 0.5 IWG. A unit-mounted potentiometer shall be provided to adjust the outdoor and return

air damper assembly to take in outdoor air to meet the minimum ventilation requirement of the conditioned space during normal operation. During economizer operation, a mixed-air temperature control shall modulate the outdoor and return air damper assembly to prevent the supply air temperature from dropping below 55 °F/ 12.8°C. Changeover from compressor to economizer operation shall be provided by an integral electronic enthalpy control that feeds input into the basic module. The outdoor intake opening shall be covered with a rain hood that matches the exterior of the unit. Water eliminator/filters shall be provided. Simultaneous economizer/compressor operation is also possible. Dampers shall fully close on power loss. Available with barometric relief or power exhaust.

2. **MOTORIZED OUTDOOR AIR DAMPERS** – Outdoor and return air dampers that are interlocked and positioned by a 2-position, spring-return damper actuator. The maximum leakage rate for the outdoor air intake dampers shall not exceed 2% when dampers are fully closed and operating against a pressure differential of 0.5 IWG. A unit-mounted potentiometer shall be provided to adjust the outdoor and return air damper assembly to take in the design CFM of outdoor air to meet the ventilation requirements of the conditioned space during normal operation. Whenever the indoor fan motor is energized, the dampers open up to one of two pre-selected positions – regardless of the outdoor air enthalpy. Dampers return to the fully closed position when the indoor fan motor is de-energized. Dampers shall fully close on power loss.

ADDITIONAL FACTORY INSTALLED OPTIONS

- **ALTERNATE INDOOR BLOWER MOTOR** – For applications with high restrictions, units are available with optional indoor blower motors that provide higher static output and/or higher airflow.
- **CONVENIENCE OUTLET (POWERED/NON-POWERED)** – Unit can be provided with an optional 120VAC GFCI outlet with cover on the corner of the unit housing the compressors.
- **ELECTRIC HEAT** - Electric Heaters range from 7 kW to 27 kW and are available in all the voltage options of the base unit.
- **PHASE MONITOR** - Designed to prevent damage in out-of-phase condition.

- **COIL GUARD** - Designed to prevent condenser coil damage.
- **BAS CONTROLS** - Include supply air sensor, return air sensor, dirty filter indicator and air proving switch.
- **DIRTY FILTER SWITCH** – This kit includes a differential pressure switch that energizes the fault light on the unit thermostat, indicating that there is an abnormally high-pressure drop across the filters.
- **BREAKER** – An HACR breaker can be factory installed on gas heat units or cooling units with electric heat.
- **DISCONNECT SWITCH** - A disconnect can be factory installed on a cooling only units sized for the largest electric heat available.
- **STAINLESS STEEL HEAT EXCHANGER** – For applications in a corrosive environment, this option provides a full stainless steel heat exchanger assembly.
- **STAINLESS STEEL DRAIN PAN** - Provides years of trouble free operation in corrosive environments.
- **SMOKE DETECTOR** – A smoke detector can be factory mounted and wired in the supply and/or return air compartments.

OTHER PRE-ENGINEERED ACCESSORIES AVAILABLE

- **ROOF CURB** - 14" and 8" high, full perimeter knockdown curb, with hinged design for quick assembly.
- **BAROMETRIC RELIEF DAMPER** – (Unit mounted – Downflow, Duct Mounted – Horizontal) – Contains a rain hood, air inlet screen, exhaust damper and mounting hardware. Used to relieve internal air pressure through the unit during economizer operation.
- **PROPANE CONVERSION KIT** – Contains new orifices and gas valve springs to convert from natural to L.P. gas.
- **-60 °F GAS HEAT KIT** – Provides an electric heat kit for the gas compartment for use in extreme low ambient conditions.
- **ECONOMIZER** (Downflow and Horizontal flow)
- **POWER EXHAUST** – (Unit mount – Downflow, Duct mount – Horizontal flow)
- **DUAL ENTHALPY KIT** - Provides a second input to economizer to monitor return air.